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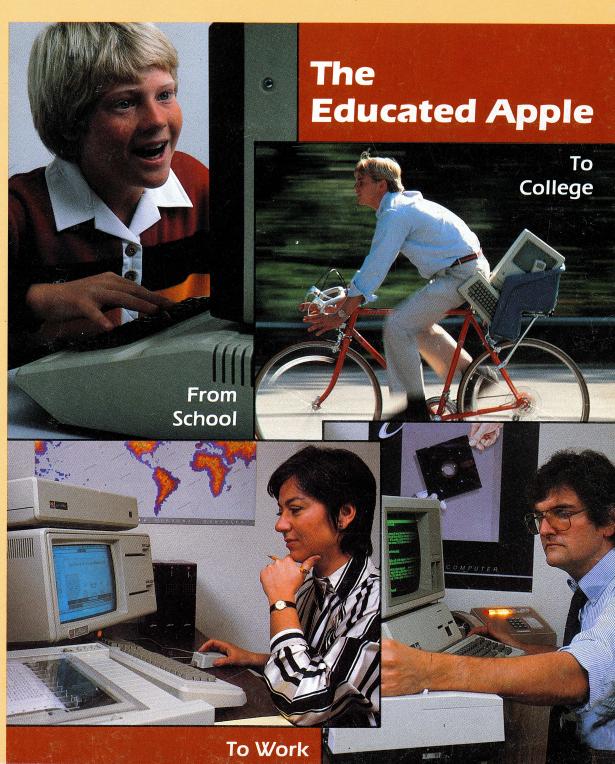
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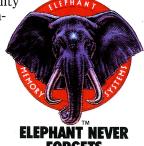
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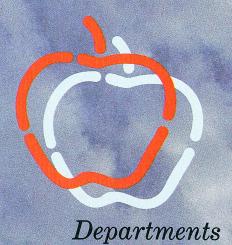




# APPIG O

Volume 5 Number 4 April/May 1984 Cover Photography by Michael Jay and Apple Computer, Inc.

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# Apple Orchard

Vol. 5, No. 4

April/May 1984

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# **Textfile**

This issue of **Apple Orchard** bears the cover date of April-May because of a major change in our distribution arrangement. We have contracted with Curtis Circulation, Inc. to act as national distributors for newsstands and other outlets. Curtis is the outstanding firm in magazine work, and we're happy to be associated with them. It means that **Apple Orchard** will be seen in more places, which is good. Outside of the U.S and Canada, another outstanding firm, Feffer and Simons, will be the folks to see about **Apple Orchard**.

But, full international distribution takes more time, and the magazines have to get out sooner. We found that if a separate April issue had been created, it would have been on newsstands for about five days. We intend to produce a special issue this fall to make a twelfth issue for 1984.

We also thank you for your comments on the improvements we have made in **Apple Orchard**; credit our Art Director Mark Eaton, new Copy Editor Nicole Lefcourt, and new Managing Editor Gene Wilson. Now look at page 73 for a new column by one of our favorite people, Scot Kamins. It's called "Books (Sort of)", and we're sure this feature will also be called a significant improvement. 900 computer books were published in 1983. Some of them are even worth reading, as Scot will tell us. Also, Viewport, a short look at industry news debuts on page 70.

This issue focuses on the educational uses of Apple computers, thanks in large part to teacher Joyce Conklin, our new Education Editor, and your requests for information on the subject. It's a fascinating story if you have kids in school, or even if you're just wondering what the next generation is up to these days. From elementary to college classrooms, Apples are present everywhere. And we didn't forget the piracy problem; suffice it to say that "I. M. Anonymous" is today a student at a prestigious university. We don't necessarily agree with the viewpoint, but you deserve to hear it.

Once again: let us know what you're thinking (well, most of what you're thinking), and what we can do to help you get more from your Apple or Apple-compatible computer. That's what we're here for.

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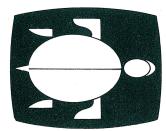
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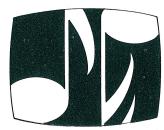
Assembly Line Madness. A race against a fast moving car assembly line to get the proper parts in place



**AlphaSprites.** Children learn the alphabet with the aid of sprite animation and speech.



**SpriteArt.** Paintbrushes and a palette of colors to create sprites and scenery and animate the whole picture!

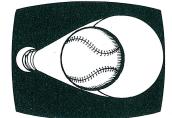


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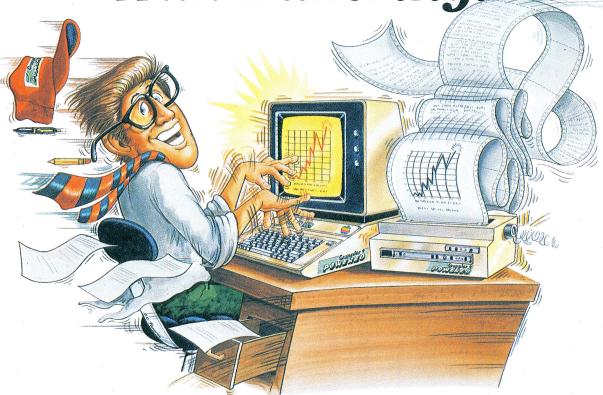
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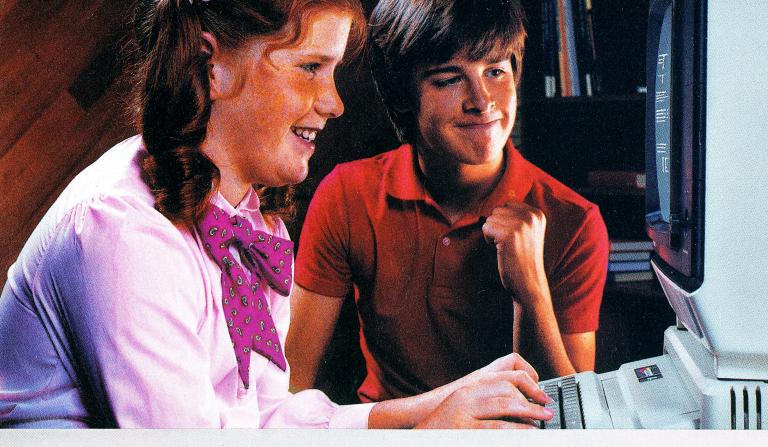
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THE NEW TIMEMASTER II



**NEW 1984** DESIGN An official **PRO-DOS Clock** 

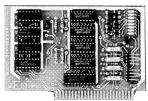
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The TIMEMASTER II includes 2 disks with some really fantastic time oriented programs (over 40) including appointment book so you'll never forget to do anything again. Enter your appointments up to a year in advance then forget them. Plus DOS dater so it will automatically add the date when disk files are created or modified. The disk is over a \$200.00 value alone—we give the software others sell. All software packages for business, data base management and communications are made to read the TIMEMASTER II. If you want the most powerful and the easiest to use clock

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- Fully compatible with ALL Apple languages and software—there are
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- The VIEWMASTER incorporates all the features of all other 80 column cards, plus many new improvements.

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VIEWMASTER	179	YES	YES	YES	YES	YES	YES	YES	YES
SUP'RTERM	MORE	NO	YES	NO	NO	NO	NO	YES	YES
WIZARD80	MORE	NO	NO	NO	NO	YES	NO	YES	YES
VISION80	MORE	YES	YES	NO	NO	YES	NO	ΝÒ	NO
OMNIVISION	MORE	NO	YES	NO	NO	NO	NO	YES	YES
VIEWMAX80	MORE	YES	YES	NO	NO	YES	NO	NO	YES
SMARTERM	MORE	YES	YES	NO ·	NO	NO	YES	YES	NO
VIDEOTERM	MODE	NO	NO	YES	NO	VES	VES	NO	VES

The VIEWMASTER 80 works with all 80 column applications including CP/M, Pascal, WordStar, Format II, Easywriter, Apple Writer II, VisiCalc, and all others. The VIEWMASTER 80 is THE MOST compatible 80 column card you can buy at ANY price!

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Specifically designed for high speed operation in the Apple IIe (runs

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the Z-80 Plus you can access the largest body of software in existence.

Two computers in one and the advantages of both, all at an unbelievably

- Can be used as a solid state disk drive to make your programs run up to 20 times FASTER (the 64K configuration will act as half a drive).
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# Ask Us/Tell Us

Address your questions, answers and comments to: Apple Orchard P.O. Box 6502 Cupertino, CA 95015

--JK., from Lewiston, Idaho, Asks Us if we didn't err in Apple Orchard's February, 1984, in stating that the Lisa 2's will run at 8Mhz. John is curious because... "On Page 11 of the Draft version 1.3, of Apple 32: A Developer's Handbook, (2/16/84) it is stated that the Lisa 2's MC 68000 operates at 5 MHz."

Our information sources, from within Apple, Tell Us that the Lisa and Macintosh computers (the entire 32-bit Family) run at 8 Mhz (well, let's be precise -- for the record -- it's actually 7.8336 MHz). The original Lisa ran at approx. 5MHz, and will be speeded up as part of the upgrade program.

It is true that Motorola has versions of the MC68000 chip running as fast as 12.5 MHz. With the newly improved operating system software we think you will be impressed (amazed?) with the speed of the Apple version running at "only" eight MHz.!

What about the handbook? Like the title says, it's only a "draft" verion.

Craig Nansen, from Minot, North Dakota, teaches a high school programming course in Pascal. He knows that people are interested in getting materials and information, and that it is difficult to get started with a new language.

Craig has 21 disks mostly packed full of demonstration programs, notes, quizzes, tests, etc. He is willing to copy these disks for five dollars each. If there is enough interest, he would like to form some type of organization for teachers of Pascal to exchange information. For further information, please contact:

Craig Nansen 1112 Glacial Drive Minot, ND 58701

In response to numerous inquiries, Allen Watson III offers the following elaboration:

Several people have tried to implement the 16-color subroutines in the January, 1984, issue of the Apple Orchard, by typing the machine code from the listing, only to find that they don't work. The problem is that three bytes of machine code don't appear on the listing.

The EdAsm assembler lists at most four bytes of machine code for an ASCII string, even when the string is longer than four characters. This occurs in lines 164, 177, and 179, where there are five-character strings.

To successfully implement the subroutines by typing in the machine code, you must include the three missing bytes.

# Address Value Meaning

\$6079	\$45	letter E
\$6093	\$48	letter H
\$6099	\$44	letter D

Helpful Hint: If you have already typed in the code without these bytes, you can avoid a lot of typing by using the Monitor's MOVE command to make room so you can insert them. Of course, if you try to use the MOVE command to move memory over itself, it just propagates the first byte. You'll have to move the rest of the code somewhere else temporarily, then move it back.

"WPL-The Sleeping Giant," a recent series of articles by Richard Loggins, certainly "wokeup" a large number of WPL followers. Many letters have been received containing suggestions further uses for WPL. Several will appear soon for the edification of

# us all. We had no idea that WPL was ALREADY so popular!

Frank Uzzolino, from Westfield, NJ. offers the following corrections to Richard's articles:

# From December, 1983's Apple Orchard; WPL1, Part III.

For Apple //e owners, the CTRL-Backslash does not clear the display. Replace the CTRL-Backslash with a CTRL-L and the display will clear.

# From January, 1984.

WPL PROGRAM: WPL2.2, Part I: When attempting to renumber a file, the program would print the title and then go into an endless loop of printing blank lines. Line 5 should read PSZ-1. The way it was printed, Z would never reach zero and the loop never would end.

WPL PROGRAM: WPL2.2, Part III: You could not exit from the renumber program with a 'Y' or 'N' as printed. Insert this line PGO START. after the eigth line of part III. The comparisons will now work properly and return to the main program.

WPL PROGRAM: WPL2.1. Part III: Line seven reads  $F/\{X\}$ , and should read:  $F/{X}/{(X)}$ 

This is to prevent an error from occurring with the Find Command alone if what is being searched for is not found. If an error does occur, program execution will resume.

- Thank You, Frank.

We've had questions requesting further information on training for Apple's new 32-bit family products.

Linda Merrill, of Apple Computer, Tells Us that a number of technical conferences are being planned by the Apple 32 Product Division. One week, in-depth conferences covering 'Pascal Development Tools for Macintosh and Lisa' have been scheduled on May 14-18. in Palo Alto, CA, and June 18-22. in Boston, MA. Other seminars will be held in a number of locations, worldwide; other topics will be presented, as well. For further information, contact:

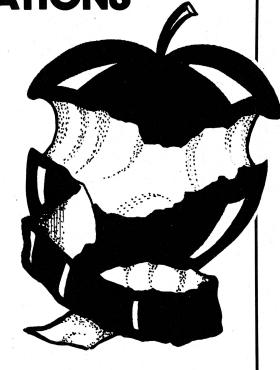
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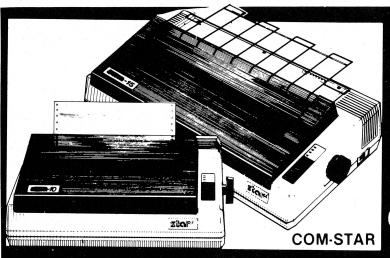
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The COMSTAR T/F (Tractor Friction) PRINTER is exceptionally versatile. It prints 8½" x 11" standard size single sheet stationary or continuous feed computer paper. Bi-directional, impact dot matrix, 80 CPS, 224 characters. (Centronics Parallel Interface).

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COMSTAR T/F (Tractor Friction) SUPER-10X PRINTER gives you all the features of the COMSTAR T/F PRINTER plus a 10" carriage, 120 CPS, 9 x 9 dot matrix with double strike capability for 18 x 18 dot matrix (near letter quality), high resolution bit image (120 x 144 dot matrix), underlining, back spacing, left and right margin settings, true lower decenders with super and subscripts, prints standard, italic, block graphics and special characters, plus 2K of user definable characters! The COMSTAR T/F SUPER-10X PRINTER was Rated No. 1 by "Popular Science Magazine." It gives you print quality and features found on printers costing twice as much!! (Centronics Parallel Interface) (Better than Epson FX 80).

# Premium Quality—120 CPS COMSTAR T/F SUPER-15½" PRINTER—\$379.00

COMSTAR T/F SUPER 15½" PRINTER has all the features of the COMSTAR T/F SUPER-10X PRINTER plus a 15½" carriage and more powerful electronics components to handle large ledger business forms! (Better than Epson FX 100).

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SUPER HIGH SPEED COMSTAR T/F (Tractor Friction) PRINTER has all the features of the COMSTAR SUPER-10X PRINTER plus SUPER HIGH SPEED PRINTING—160 CPS, 100% duty cycle, 8K buffer, diverse character fonts, special symbols and true decenders, vertical and horizontal tabs. RED HOT BUSINESS PRINTER at an unbelievable low price!! (Serial or Centronics Parallel Interface)

# Superior Quality SUPER HIGH SPEED—160 CPS COMSTAR T/F 15½" PRINTER—\$579.00

SUPER HIGH SPEED COMSTAR T/F 15½" PRINTER has all the features of the SUPER HIGH SPEED COMSTAR T/F 10" PRINTER plus a 15½" carriage and more powerful electronics to handle larger ledger business forms! Exclusive bottom paper feed!!

# PARALLEL INTERFACES For VIC-20 and COM-64—\$49.00 For All Apple Computers—\$79.00

NOTE: Other printer interfaces are available at computer stores!

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Add \$17.50 för shipping, handling and insurance. WE DO NOT EXPORT TO OTHER COUNTRIES EXCEPT CANADA.

Enclose Cashiers Check, Money Order or Personal Check. Allow 14 days for delivery, 2 to 7 days for phone orders, 1 day express mail! Canada orders must be in U.S. dollars. VISA — MASTER CARD ACCEPTED. We ship C.O.D.

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"Odesta has set the standard against which everyone else in this industry will be measured..." lan Chadwick, InfoAge 6/83

# Checkers 2.1 by David Slate

"It's a textbook tutorial on a disk.... a primer on artificial intelligence." Softalk 3/83

"... a gold-plated edition of a classic." Apple Dayton Journal 3/83

# Chess 7.0 by Larry Atkin

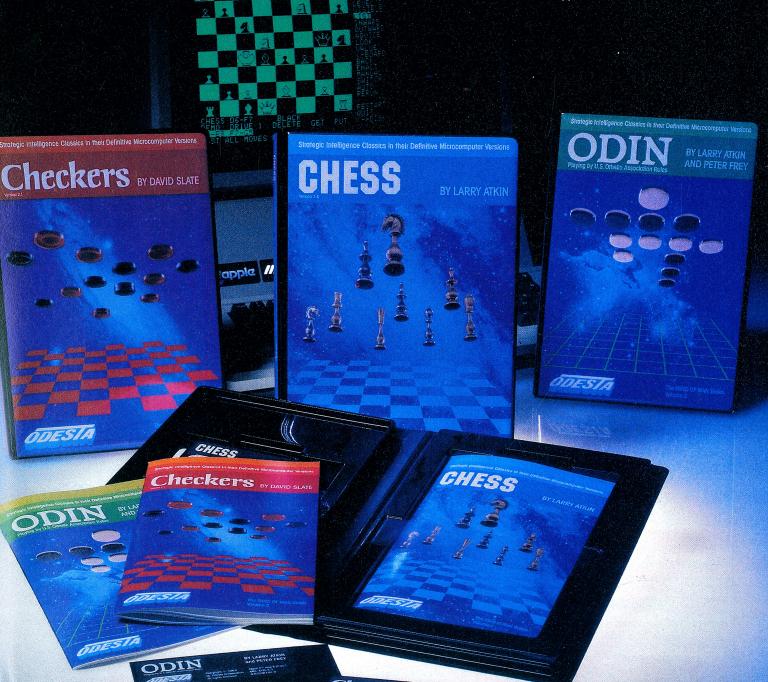
"Chess 7.0 is the definitive chess game available on the Apple and Atari computers... It is certainly the best chess program that I have seen for any microcomputer."

The Book of Apple Software 1983

# Odin by Larry Atkin & Peter Frey

"Odesta has developed a program that not only plays a devastating game of Othello, but also helps you get the hang of it as you go along." Softalk 11/82

"Odin is the definitive Othello program . . . The Book of Apple Software 1983



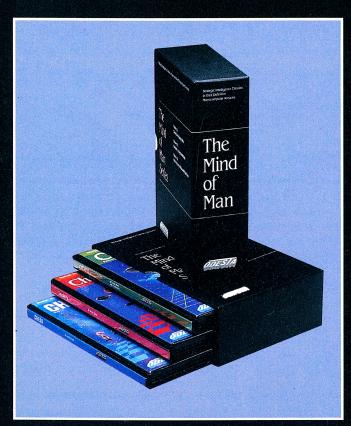
# THANKS

# We gratefully acknowledge the many positive comments that we have received in response to Chess 7.0, Checkers 2.1, and Odin.

# Chess 7.0 – Then and Now

In 1982, we introduced **Chess 7.0**, by Larry Atkin. For the first time, the chess player could save games to disk, take back moves easily, learn from classic games, use a **real** manual, enjoy an extensive opening library, fast play, a smart end-game, and in general work with a program **designed** to extend his or her own reach. **Chess 7.0** also played better than any other chess disk on the market. And although other programs are now beginning to offer some of **Chess 7.0**'s features, **Chess 7.0** is still, by far, the learning, analytical tool for the chess person. Decide for yourself – ask your dealer to show you the interactive chess game where you get better, not bored.

# The Best are Now Boxed!



The perfect gift for the whole family. "... if you are parents looking to offer your children an alternate, non-violent learning-plus-entertainment option to arcade mindlessness, then these are simply the best products." InfoAge. Save \$25.00 on this specially priced set.

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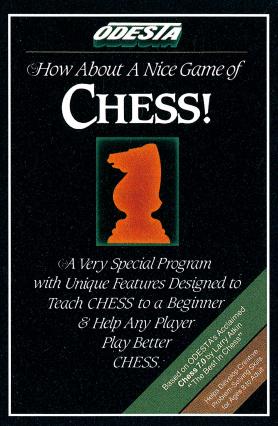
Chess 7.0, Checkers 2.1, and Odin are now available for the IBM PC and Commodore 64. Thanks for waiting.

# More Feedback

From Neil Shapiro, Popular Mechanics "PM Software Monitor" 5/83: "The Best in Chess ... all the options make playing a game with Chess 7.0 more like having a conversation with a chess teacher than playing against a machine."

From Jonathan Cerf, former World Othello® champion "... an extremely formidable opponent – in most situations, **Odin's** play is world class by human standards." Othello Quarterly, summer '83.

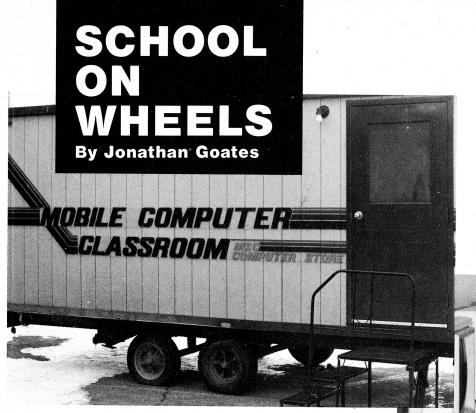
# Another First – A Program Designed to Teach Chess



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mobile classroom that will introduce the computer and its various capabilities to school administrators, teachers, students and businesses has been introduced by MSC Computer Store in Orem.

Donald J. West, manager of MSC Computer Store in Orem, said the "Mobile Computer Classroom" will service schools and businesses in outlying areas where there are too few computers to do an adequate training job.

The classroom, which measures eight feet wide and 20 feet long, resembles a mobile home on wheels. It sits on tandem axles and is pulled by a 3/4 ton van. Cost is \$12,000 plus the computer equipment.

Ten individual training sections inside the classroom are equipped with computer, two disc drives and a monitor. Training capacity is 40 persons a day, or 15,000 a year. Some 600 teachers and administrators in the Alpine School District will be trained in the mobile classroom between now and the end of this school year. Also, the Nebo School District and Utah Parks Council will receive training classes this year.

At present the classroom uses Apple //e computers for its training. since Apple has the largest number of computers -- about 5,000 -- in Utah schools. But Mr. West said that once the concepts are learned, they could be applied to most any computer application with positive results.

The major benefit offered by the mobile classroom, according to Mr. West, is that it is easier to provide business and school districts with training, without having to make a huge capital investment.

The training sessions include a course on introduction to computers, word processing, file management and a horizons course for business or education.

A typical day would include a session with administrative personnel in the morning at one school, and the same session for another school in the afternoon. From 3 to 5 p.m., teachers will be trained, and from 5 to 6 p.m., children and PTA groups will have an opportunity to use the classroom.

"We stress the 'hands on' approach," said Mr. West, "because it gets people involved and they learn much faster. The mobile classroom eliminates the resistance many have in learning about computers. Going into the classroom is an adventure. It is fun and easier for many to accept."

In addition to the basic courses offered, specialized courses are taught on drill and practice programs for teachers in helping students increase their proficiency.

The mobile classroom is an extension of MSC's full education centers that offer full courses of computer instruction at each of its three stores in Orem, Sandy and Salt Lake City.

Courses in the mobile classroom are offered at \$150 to \$250 per session and cover the costs for up to 10 students. The same course is offered at \$25-35 per person for individuals taking the session in the store.



A mobile trailer classroom sponsored by MSC Computer Stores in Orem, Utah, brings the computer classroom to the school where administrators and students are being taught.

"We have found that there is a real need for training people in the use of computers," said Mr. West. "That is why we have taken computer hardware to the schools and businesses and trained administrators, teachers and students."

"As far as we know, this speciallybuilt mobile classroom is the first of its kind in use. We hope to maximize its use in training people to use computers in their various capabilities, and to provide service to adults and acquaint children with the computer's potential." Mr. West concluded.

# **APPLESEED**<sup>T.M.</sup>

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Designed for use in systems where a full Apple computer may not be necessary or desired, the APPLESEED Bus system retains all the essential features of an Apple system, including mother board compatibility with almost every plug-in board available for the Apple ][.

Programs are developed in assembly language on a standard Apple ][. Upon completion, a set

of EPROM's are blown and inserted into the APPLESEED Bus system, which then takes control of program execution.

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# A sampling of APPLESEED Bus components:

**CPU BOARD** The 6502 has been removed from the mother board and included in this card, which also contains the clock circuitry for the system.

**64K RAM BOARD** 64K of dynamic RAM with provision for control to be used in the normal Apple ][ conventions; deleting COOO-CFFF and software control over the DOOO-FFFF area.

**EPROM BOARD** Jumper selectable for 2716 (EPROM) or 34199 (PROM); blow 2716 assembly language programs and then run them in this EPROM board. Jumpers allow selection of software on/off, initialize on/off and other controls.

**UART BOARD** Software/hardware select all standard EIA baud rates. The board supports four 6850 UART's which allow four independent input and output EIA lines. Each UART is fully programmable for parity, bit length, baud rate, etc.

UNIVERSAL BOARD The APPLESEED Universal board contains the following: One 2716 socket for an F8 PROM, one 2K × 8 bit RAM (0-7FF), one UART channel for serial communications, 8 parallel INPUT lines (TTL), 8 parallel OUT-PUT lines (TTL), device decode for one additional standard slot-dependent board, support for standard Apple ][ style keyboard, and a power supply connection. Each feature is independent and any combination may be used simultaneously. The Universal board is designed to be used with the APPLESEED CPU board.

TEXT BOARD The TEXT board is designed to add the conventional TEXT (page 1 and page 2) to an APPLESEED system. The board generates composite video to plug into a standard monitor or T.V. modulator. The board provides 40 columns × 24 rows in each page and is not slot dependent.

MOTHER BOARD 10-slot motherboard is fully compatible with most Apple add-on cards currently available.

Please call or write for prices and more detailed information on these and other APPLESEED Bus products.

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# Grading Grade **Programs** By Joyce Conklin

ho needs a grade book program? Why don't you just use VisiCalc? That was my response when I first saw these entries in the educational software race. But after thinking about it a little while, I realized that not every teacher is so computer-oriented as to want to spend the time necessary to learn what "/BCDEFGIMPRSTVW-" might mean! A teacher wants to have a reliable, relatively quick and easy (never quickand-dirty in a school room!) method of recording information about each of the students, and assistance in printing out this information to satisfy the great administrative maw which never seems to get enough paper for nourishment. If in addition you can have statistical information about the members of the class (see article by this author in Apple Orchard, March 1983) this will be of assistance in planning next year's work.

Each program will be reviewed individually; there is a summary of these four at the end of the article.

### Teacher's Apple

Publisher: Simple Software System

P. O. Box 41069 San Jose, CA 95160

Price: \$34.95

Back-up Disk: Program disk copyable with CopyA

Replacement policy: \$10.00 after 30 days Maximum # of students/class: 50/disk Maximum # of grades/student: 200/disk

Maximum # of classes/disk: 1

System Requirements: II Plus or //e with 48K, 1 disk drive,

DOS 3.3

Manual: preliminary edition

Due to the always-restricted funds available for school supplies (the "rising tide of mediocrity" never seems to be stemmed by a comparable increase in fiscal ability) the initial choice might well be Teacher's Apple, for a couple of reasons. The cost of the program is within the limits set for petty cash expenditures in some school districts and well within the limits for supplies. In addition, the chance to copy the disk for your own use (not one disk with multiple copies for a school, please!) makes this an attractive package. The screen display is never crowded and areas for data entry are outlined with square brackets. Error checking prevents improper characters being entered (%856123 for example, instead of a name) and you are prompted to enter last name first so that the information can be sorted when it is time to print out the reports.

When setting up a class disk, the first step is to transfer the program to your data disk, as each class must be on a separate disk which contains both program and data. Although the documentation indicates that you will be warned about the erasure of student data (not the program) and then presented with the menu, I did not find that this happened. If you are uneasy about formatting your main disk, be aware that what you should do first is to make a complete copy using CopyA or some other regular copy program and then format the disk. If there is anything on the main disk (documentation indicates some sample data) you will still have it.

When entering student names (no provision is made for student ID numbers) you are asked to confirm each entry and then that one is printed to the disk. That's a rather slow process if you are setting up 150 or more students, which is a normal load for a high school teacher. In addition, although 17 spaces are indicated for the last name, you can only enter 16; if you try the seventeenth space the program beeps. (Incidentally, do you suppose that the next major upgrade from Apple Computer, Inc. will be a more pleasant sound for Control-G?!) To save the 17 student records shown in the accompanying illustrations required 1 min. 24 sec.; the screen shows which student record is being updated and also flashes a message indicating that you should not open the disk drive door or type on the keyboard or any other "doodling" motions.

When it comes to editing the information, you must read the manual carefully. To enter corrected values for the possible points, you must enter DATA when asked for the last name. If you want to change class information (name or period) you must enter CLASS in the place of LAST NAME. To finish corrections and return to the main menu, you must press CTRL-Q. Neither of these directions is available on the screen although there is plenty of room for both in addition to the information. In printing out the information, you must ask for special printouts in order to return to the main menu, which seems to be an oversight at the very least; you should be able to return to the previous level menu from any menu in which you find yourself.

# Figure 1

ARLESS,FRANCINE64.33%
BUNKER, BETSY58.04%
CHEESE, CHARLIE35.66%
DAWN, DORIS
EAGER, EDDIE
FORD, OPAL58.74%
GLENN, GERTRUDE61.53%
HADDAM, ADAM
MANOR, HEATHCLIFF91.60%
MARX, SPENCER
POPPINS, MARIE72.72%
QUEUE, SUZY62.23%
ROJO, IVAN50.34%
SPLYCER, JEANNE70.62%
TURNER, NAT72.72%
UPBRINGING, JOYOUS
WOLFE,PETER
Figure 2

### Figure 2

_
MARX, SPENCER240.0UT.OF.143167.8%
MANOR, HEATHCLIFF
UPBRINGING, JOYOUS126. OUT. OF. 14398. 11%
EAGER, EDDIE
WOLFE, PETER
HADDAM, ADAM
POPPINS, MARIE
TURNER, NAT
SPLYCER, JEANNE
ARLESS, FRANCINE92.0UT.OF.14364.33%
DAWN, DORIS
QUEUÉ, SUZY
GLENN, GERTRUDE
FORD, QPAL
BUNKER, BETSY
ROJO, IVAN
CHEESE, CHARLIE

# Figure 3

ARLESS, FRANCINE

1.	15			1	UN LINE
2.	14	20	10:15.83	2	ON LINE
3.	20	20	11,11.83	1	PROGRAM
4.	43	103	1.26.84	-	FINAL EXAM
		•••			TIME EARLY
ΔRI	FSS F	PANCT	NE		92.OUT.OF.14364.33%
HILL	200,1	MHINET	ME	• • • • •	
BUN	KER.	BETSY			
1.				1	ON LINE
		20	10.15.83		ON LINE
	0		11.11.83		PROGRAM
	62		1.26.84	1	FINAL EXAM
٠.	62	103	1.20.84		FINAL EXAM
DUA	WED F				
BUN	KEK, E	E 151.			,85.001.0F.145
CHE	FSF.	CHARL	TE		
1.		CHINE		1	ON LINE
	9	-	10.15.83		ON LINE
3.					
	0	20		1	PROGRAM
4.	42	103	1.26.84		FINAL EXAM
			_		
CHE	ESE, L	HAKLI	E		
DAL	IN. DO	nets			
1.	15	31113		1	ON LINE
2.	15	20	10.15.83	2	
4.	10	20	10.15.85	4	ON LINE

FINAL FXAM

# Figure 4

10.15.83 2 11.11.83 1 1.26.84

	E	E	173	E	
		-		X	
		-		Α	
				M	
		-			
		-			
		-			
			-		
POSSIBLE	Ø	20	20	1Ø3	
ARLESS, FRANCINE	15	14	20	43	
BUNKER, BETSY	5	16	Ø	62	
CHEESE, CHARLIE		9	Ø	42	
DAWN, DORIS	15	15	Ø	60	
EAGER, EDDIE		20	14	76	
FORD, OPAL		18	Ø	51	
GLENN, GERTRUDE		16	18	44	
HADDAM, ADAM		17	13	61	
MANOR, HEATHCLIFF		2Ø	16	86	
MARX, SPENCER		17	161	57	
POPPINS, MARIE		20	6	63	
QUEUE, SÚZY		20	16	44	
ROJO, IVAN		16	7	49	
SPLYCER, JEANNE		20	14	57	
TURNER, NAT		17	18	54	
UPBRINGING, JOYOUS		20	19	72	
WOLFE, PETER		19	20	62	

# Figure 5

\*\* CONKLIN'S PER.1 ORCHARD CULTI \*\*
GRADEBOOK AS OF Ø1/23/84

	ENT	TRY NL	IMBER					
NAME	1	2	3	4	SUM	PCT	GRADE	
ARLESS, FRANCINE	15	14	2Ø	43	92	58	D	_
BUNKER, BETSY	5	16	Ø	62	83	53	D	
CHEESE, CHARLIE	Ø	9	25	42	51	32	F	
DAWN, DORIS	15	15	Ø.	60	90	57	D	
EAGER, EDDIE	15	20	14	76	125	79	В	
FORD, OPAL	15	18	Ø	51	84	53	D	
GLENN, GERTRUDE	10	16	18	44	88	56	D	
HADDAM, ADAM	14	17	13	61	1Ø5	66	C	
MANOR, HEATHCLIFF	9	20	16	86	131	83	В	
MARX, SPENCER	5	17	16	57	95	60	D	
POPPINS, MARIE	15	20	6	63	194	66	С	
QUEUE, SUZY	9	2Ø	16	44	89	56	D	
ROJO, IVAN	ø	16	7	49	72	46	F	
SPLYCER, JEANNE	10	20	14	57	101	64	C	
TURNER, NAT	15	17	18	54	194	66	C	
UPBRINGING, JOYOUS	15	20	19	72	126	8Ø	· B	
WOLFE, PETER	15	19	20	62	116	73	C	
TOTAL POINTS	15	20	20	193	158			
	ARLESS, FRANCINE BUNKER, BETSY CHEESE, CHARLIE DAWN, DORIS EAGER, EDDIE FORD, OPAL GLENN, GERTRUDE HADDAM, ADAM MANOR, HEATHCLIFF MARX, SPENCER POPPINS, MARIE QUEUE, SUZY ROJO, IVAN SPLYCER, JEANNE TURNER, NAT UPBRINGING, JOYOUS WOLFE, PETER	NAME 1  ARLESS, FRANCINE 15  BUNKER, BETSY 5  CHEESE, CHARLIE Ø  DANN, DORIS 15  EAGER, EDDIE 15  FORD, OPAL 15  GLENN, GERTRUDE 10  HADDAM, ADAM 14  MANOR, HEATHCLIFF 9  MARX, SPENCER 5  POPPINS, MARIE 15  QUEUE, SUZY 9  QUEUE, SUZY 9  TURNER, NAT 15  UPBRINGING, JOYOUS 15  WOLFE, PETER 15	NAME 1 2  ARLESS, FRANCINE 15 14  BUNKER, BETSY 5 16  CHEESE, CHARLIE Ø 9  DAWN, DORIS 15 15  EAGER, EDDIE 15 2Ø  FORD, OPAL 15 18  GLENN, GERTRUDE 1Ø 16  HADDAM, ADAM 14 17  MANDR, HEATHCLIFF 9 2Ø  MARX, SPENCER 5 17  POPPINS, MARIE 15 2Ø  QUEUE, SUZY 9 2Ø  QUEUE, SUZY 9 2Ø  TURNER, NAT 15 17  UPBRINGING, JOYOUS 15 2Ø  WOLFE, PETER 15 19	NAME 1 2 3  ARLESS, FRANCINE 15 14 22  BUNKER, BETSY 5 16 06  CHEESE, CHARLIE 0 7 0  DANN, DORIS 15 15 07  EAGER, EDDIE 15 20 14  FORD, OPAL 15 18 06  GLENN, GERTRUDE 10 16 18  HADDAN, ADAM 14 17 13  MANDR, HEATHCLIFF 9 20 16  MARX, SPENCER 5 17 16  POPPINS, MARIE 15 20 6  OUEUE, SUZY 9 20 16  ROJO, IVAN 0 16 7  SPLYCER, JEANNE 10 20 14  TURNER, NAT 15 17 18  UPBRINGING, JOYOUS 15 20 19  WOLFE, PETER 15 19 20	ARLESS, FRANCINE 15 14 20 43 BUNKER, BETSY 5 16 0 62 CHEESE, CHARLIE 0 9 9 0 42 DAWN, DORIS 15 15 0 60 EAGER, EDDIE 15 20 14 76 FORD, OPAL 15 18 0 51 GLENN, GERTRUDE 10 16 18 44 HADDAM, ADAM 14 17 13 61 MANDR, HEATHCLIFF 9 20 16 86 MARX, SPENCER 5 17 16 57 POPPINS, MARIE 15 20 6 63 OUEUE, SUZY 9 20 16 44 ROJO, IVAN 0 16 7 49 SPLYCER, JEANNE 10 20 14 57 TURNER, NAT 15 17 18 54 UPBRINGING, JUYOUS 15 20 19 72 WOLFE, PETER 15 19 20 66	NAME 1 2 3 4 SUM  ARLESS, FRANCINE 15 14 20 43 92  BUNKER, BETSY 5 16 0 62 93  CHEESE, CHARLIE 0 9 0 42 51  DANN, DORIS 15 15 0 0 0 90  EAGER, EDDIE 15 20 14 76 125  FORD, OPAL 15 18 0 51 84  GLENN, GERTRUDE 10 16 18 44 88  HADDAM, ADAM 14 17 13 61 105  MANNG, HEATHCLIFF 9 20 16 86 131  MARN, SPENCER 5 17 16 57 95  POPPINS, MARIE 15 20 6 63 104  QUEUE, SUZY 9 20 16 44 89  ROJO, IVAN 0 16 7 49 72  SPLYCER, JEANNE 10 20 14 57 101  TURNER, NAT 15 17 18 54 104  UPBRINGING, JOYOUS 15 20 19 72 126  WOLFE, PETER 15 19 20 62 116	NAME 1 2 3 4 SUM PCT  ARLESS, FRANCINE 15 14 20 43 92 58 BUNKER, BETSY 5 16 0 62 83 53 CHEESE, CHARLIE 0 7 0 42 51 32 DANN, DORIS 15 15 0 60 90 57 EAGER, EDDIE 15 20 14 76 125 79 FORD, OPAL 15 18 0 51 94 53 GLENN, GERTRUDE 10 16 18 44 88 56 HADDAM, ADAM 14 17 13 61 105 66 MANDR, HEATHCLIFF 9 20 16 86 131 83 MARX, SPENCER 5 17 16 57 95 60 POPPINS, MARIE 15 20 6 63 104 66 QUEUE, SUZY 9 20 16 44 89 56 GUEUE, SUZY 9 20 16 44 89 56 SPLYCER, JEANNE 10 20 14 57 101 64 SPLYCER, JEANNE 10 20 14 57 101 64 UPBRINGING, JOYOUS 15 20 19 72 126 80 WOLFE, PETER 15 19 20 62 116 73	NAME 1 2 3 4 SUM PCT GRADE  ARLESS, FRANCINE 15 14 20 43 92 58 D  BUNKER, BETSY 5 16 06 62 83 53 D  CHEESE, CHARLIE 0 9 0 42 51 32 F  DANN, DORIS 15 15 0 60 99 57 D  EAGER, EDDIE 15 20 14 76 125 79 B  FORD, OPAL 15 18 0 51 84 53 D  GLENN, GERTRUDE 10 16 18 44 88 56 D  HADDAM, ADAM 14 17 13 61 105 66 C  MANOR, HEATHCLIFF 9 20 16 86 131 83 B  MARX, SPENCER 5 17 16 57 95 60 D  POPPINS, MARIE 15 20 6 63 104 66 C  QUEUE, SUZY 9 20 16 44 89 56 D  POPPINS, MARIE 15 20 6 63 104 66 C  QUEUE, SUZY 9 20 16 77 2 46 F  SPLYCER, JEANNE 10 20 14 57 101 64 C  TURNER, NAT 15 17 18 54 104 66 C  UPBRINGING, JOYOUS 15 20 19 72 126 80 B  WOLFE, PETER 15 19 20 62 116 73 C

\* ( ) INDICATES A SCORE LEFT OUT

KEY

3: PROGRAM 1 4: FINAL EXAM 1: ON LINE 1

Reports available from Teacher's Apple include a summary in alphabetical order, with percentage indicated to two decimal points (Figure 1); a ranked summary from top to bottom score (Figure 2). (Notice the error in Spencer Marx's grade, discussed in the following paragraph.) Individual scores could be cut into strips and handed to the student if you desired, although they are not appropriate for delivery to the home; and a printout which looks much like a grade book.

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# PRO/PAC

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## EPSON PRINTER CONTROL PROGRAM

	PRINI	EK	OPTIONS
A	CONDENSED	G	6 LINES/INCH
В	DOUBLE WIDTH	н	8 LINES/INCH
C	ITALICS	1	10 LINES/INCH
D	HALF SIZE	J	SPECIAL SPACING
E	EMPHASIZED	K	UNIDIRECTIONAL
F	DOUBLE STRIKE	L	BIDIRECTIONAL

### SOME COMBINATIONS

- EMPHASIZED DOUBLESTRIKE
  DOUBLEWIDE EMPHASIZED
  DOUBLEWIDE EMPHASIZED
  DOUBLEWIDE EMPHASIZED DOUBLESTRIKE
  CONDENSED DOUBLEWIDE
  CONDENSED DOUBLESTRIKE
  CONDENSED DOUBLESTRIKE
  CONDENSED HALF SIZE
  RETURN TO STANDARD SETTINGS
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The major problems with this program were the documentation, which is gently called "preliminary." It has a multitude of typographical errors, although the material has been duplicated using a letter-quality printer and a good xerographic machine. The worst thing was the bug in the disk that came with the review copy, causing the program to hang up when an attempt was made to edit points for a particular student. Entering the name correctly did not allow you entry to the indicated menu for correction of grades. As you can see in Figures 2 and 4, the points for Spencer Marx's program were incorrectly entered, much as I am sure he would like to have 161 of a possible 20 points!

### Class Rx

Publisher: Educational Systems Engineering

2-1645 East Cliff Dr., #40 Santa Cruz, CA 95062

Price: \$85.00 (Limited introductory price \$50.00)

Back-up Disk: none mentioned Replacement policy: none mentioned Maximum # of students/class: 40 Maximum # of grades/student: 50 Maximum # of classes/disk: 6

System Requirements: II/II Plus or //e with 48K, 1 disk

drive, DOS 3.3, printer Manual: preliminary version

Class Rx allows you to keep 6 classes on one data disk, but requires that you use the data diskettes provided with the package; you cannot use your own blank disks for data, which is not very flexible. There are two data disks provided (color-coded yet!) and you *must* make a data back-up before

you can leave the program. To prevent a lot of re-typing time when setting up a class record, names are saved after each nine entered. The program will automatically alphabetize the names so it is not necessary to enter them in this manner, although I cannot conceive that the teacher would not have a pre-alphabetized list from which to enter the data.

If you press «RETURN» instead of «ESC» after entering the final student name, you are locked into entering some name (any name) in the next record. The documentation suggests that you use ZZZ; I used NONE in trying to use the program with only on-screen helps, and found NONE neatly alphabetized in the middle of the list! You are prompted to enter Last Name, First Name, Book Number, Gender, and Special Problems. The first two are ordinary (limit is 20 characters each); the Book Number is limited to 3 digits so you may not substitute a 6-digit student ID number; GIRL is the default for gender if you just «RETURN» past that item! Special Problem asks for only a Y/N entry; you would have to have the specific infomation elsewhere. This program has solved the CTRL-G problem mentioned above with a lower-pitched tone; although still not entirely pleasant, it does alert the touch-typist to unacceptable entries.

When entering grade information for each student, you are first asked the name of the item (Test #1, Homework #5, etc.) and then the date and the possible points. You must enter all numeric values as a two-digit entry - the program will not accept "9" for "09". The "D" key works much the same way as the space bar in Apple II VisiCalc - it is a toggle switch to control the direction to be followed by the cursor when you hit the arrow keys. A hyphen in the upper-right corner of the screen indicates that the arrows will move the

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EXPIRATION DATE		

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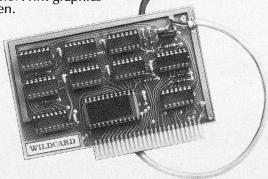
\$139<sup>95</sup>

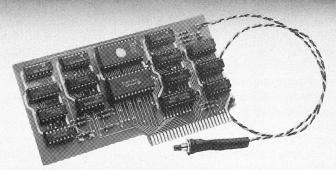
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System requirements: Wildcard: Apple II + w/64K, Apple IIe, Wildcard: Apple IIe, II + , II. All cards work with Franklin computers. An \$8.00 mod kit is required for Franklin 1000, 1200.

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Circle HelpCard No. 15

cursor horizontally; an exclamation point indicates vertical motion. The program will not accept grades greater than the possible points indicated; you may pass over a missing score by pressing "E"; you may correct an incorrect entry by moving the cursor to the proper location and typing over. The package comes with stickers which you may attach to the keyboard to convert a section of the keyboard into a ten-key entry area, or you may use the regular number keys.

The screen design for grade entry includes a large amount of inverse (black letters on white, green or amber, depending upong your monitor). This can create skewing of the picture if your monitor is not finely adjusted, especially at the top of the screen. You may select to title pages in your grade book so that you may show all the homework on one report, all the quizzes on another, the tests on yet another, etc. It is also possible to erase the grades from the file without erasing the student names, so that you may enter new information for the next grading period. If you have reached the maximum of 6 classes on a disk, you may erase the entire file and reuse the disk. Warning!! You should definitely have a hard copy of the file before deleting it; students are sure to come back for verification of their grades just after you press the "RETURN" key!!

The grade-cut percentages can be selected by the teacher; the hard-copy printouts include Grade Sheet, Score Distribution, Student Progress Reports, and a Daily Attendance Form. A Printer is required for these forms; there is no way to display the reports on the screen only.

# **Grade Book Plus**

Publishers: Educational Microcomputer Associates, Inc.

P. O. Box 339 Los Altos, CA 94022 (415) 326-1585

Price: Individual version: \$49.00 School-site version: \$125.00

Back-up Disk: Contains copy program on disk

Replacement policy: none mentioned Maximum # of students/class: 40 Maximum # of grades/student: 60 Maximum # of classes/disk: 6

System Requirements: II/II Plus or //e, 48K, one drive,

DOS 3.3

Manual: Loose-leaf, 8-1/2" x 11", very detailed.

The programmer worked to make this program usable by the minimum Apple system possible - i.e. with a single disk drive; therefore all data is stored on the same disk as the program. Grade Book Plus presents you with a menu to start, which includes an option to receive on-screen instructions. After reading these, if you wish, you should select the option to make a complete copy of the disk. The program disk is protected, but will copy itself if you also have the password which is supplied with the complete package. Any data files copied in this manner cannot be copied by an ordinary copy program, but it is possible to save data files in CopyA-able form or even in DIF format. You are asked to enter your last name, which is written to the disk; multiple teacher use of a single-buyer disk is thus inhibited. The copy-program currently on the disk, from the Lawrence Hall of Science, allows you to make unlimited back-ups of your disk. The one-disk drive version has an unusual characteristic in that you must enter the same volume number for your

backup disk or the copy program will not work, even though you are switching disks during the procedure. EMA states that the next revision of the program will use a different copy program and thus will allow you to use different volume numbers if you so choose.

A special school-license version of Grade Book Plus is available from EMA, allowing backups for all teachers at one school site. This type of program distribution is a welcome improvement on the usual copy-protection schemes which mandate a separate package for each station. The finances of schools are limited enough; EMA deserves credit for initiating this method of selling educational software.

The maximum number of characters in a student name is twenty, and the last and first names are separated by a hyphen when entering; this is a bit awkward at first, but commas and colons are prohibited, so the hyphen is the next best choice for a delimiter. You can select unweighted grades (everything counts proportionally to the points assigned) or weighted (e.g. quizzes count twice as much as homework, even though each quiz and each homework assignment is graded on a ten-point scale).

The method suggested in the manual is a bit unwieldy, but the best available, given the constraints of memory space; enter the homework score normally - "tell the computer" that 20 points are possible on the quiz - double each student's score before entering. I thought the computer was supposed to do the computing!! (The illustrations used in this article for Grade Book Plus assume all assignments have equal weight.) You may also keep track of bonus points by assigning them to an entry which has 0 possible points. If you have very large classes and many entries for each student, it is possible that the disk capacity may be exceeded, in which case you will need to split the classes between two data disks. You do this by making a complete backup and then removing three classes from each disk (classes 1-3 from disk #1, classes 4-6 from disk #2)

# Figure 6

EAGER, EDDIE

SCORES AS OF: Ø1/23/84

- (1) ON LINE 1: 15/15
- (2) ON LINE 2: 20/20
- (3) PROGRAM 1: 14/20
- (4) FINAL EXAM: 76/103

TOTAL POSSIBLE POINTS: 125/15879% = 8

# Figure 7

EAGER, EDDIE

SCORES AS OF: Ø1/23/84

- (1) ON LINE 1: 15/15
- (2) ON LINE 2: 20/20
- 3) PROGRAM 1: 14/20
- (4) FINAL EXAM: 76/103

TOTAL POSSIBLE POINTS: 125/158 79% = 0.K.

### Figure 8

```
** CONKLIN'S PER.1 ORCHARD CULTI **
STATISTICS AS OF: Ø1/23/84
17 STUDENTS
               MEAN: 97.41
               N: 17
               MEDIAN: 95
               STANDARD DEVIATION: 20,38
               TOTAL POINTS: 158
Ø FANTASTIC'S
Ø WHEE!! S
1 NOT BAD'S
               131
3 0. K. 'S
               126
               125
               114
 YOU'RE SLIPPING'S 105
               104,104
               101
               95
8 000FF!'S
               92
               90
               89
               88
               84
               83
               72
               51
```

Output of results may be either to the screen or to the printer, and you may select 80-column or 132-column printouts, depending on your printer. You may select a complete gradebook printout (Figure 5) (the 132-column format would be mandatory as the end of semester approaches!), or individual student reports by student name or by assignment. You can include the student's grade to date in the report, as shown in Figure 6 or leave that out. When selecting the grade cuts, you may have as many as you want (5, 12, 15 etc.) and you may name them what you want. Figure 6 shows the normal grade name (B); Figure 8 shows the statistical analysis of the "semester" grades, with the other type of names for the grade ("Fantastic" A+, "Whee" A, "Not Bad" B, etc.) When displaying the statistics for a single assignment or test, the grades are displayed in descending order; if more than one student obtained the same grade, it is printed multiple times, thus allowing the use of this printout as a histogram, although the orientation of the grades will be reversed if you try to make a bell-shaped curve by turning the printout sideways.

# **Grade Master**

Publishers: Micro-vision P. O. Box 61553 Houston, TX 77208

Price: \$75.00 (introductory price)

Back-up Disk: sent upon reciept of warranty card

Replacement policy: \$10.00 after 30 days

Maximum # of students/class: 50

Maximum # of grades/student: 36

Maximum # of classes/disk: 7

System Requirements: II Plus or //e, 48K, DOS 3.3, 2

disk drives

Manual: loose-leaf binder, 8" x 9", very detailed Additional: Self-running demo available for dealers.

Grade Master shows evidence of much thought as to what is needed by a teacher. Although the number of grades per

student is less than for the other programs discussed, this is the major lack that I can see, if I were to use it in my classes. I had three classes last year that had more than 50 component grades by the end of the semester! But most teachers do not have that many individual grades, and the memory space had to be saved in some way, to allow for all the other features. There has been excellent publisher support during the review of this program, with updated versions to utilize the latest hardware capabilities from Cupertino. Version 1.21 will work on the Apple //e as well as Apple II Plus (the original equipment); it does not support the Videx 80column card at the moment, but may well do so in Version 1.3! Updates of the manual are possible because the format is a loose-leaf binder. Considerable editorial work has been done to make the manual useful to a complete computer novice, with illustrations of each of the menu screens.

Features found in Grade Master include the ability to specify student ID number as well as name, to weight grades by giving more credit for tests than homework, and to ignore certain categories of grades if you wish. In selecting the weighting, you may skip over any of the categories you wish to ignore, but the percentages which are assigned must add up to 100 or you cannot leave this section of the program. Types of grades include tests, lab reports, quizzes, daily work, homework, projects, class work, notebook, book report, research paper, final exam, and other. The categories selected for this article were limited to tests and projects which were weighted at 50% each. When specifying the titles for printed reports you must put something in each category including which semester and which marking period (6 week or 9 week); the program will not let you blank any of these and seems to be missing the heading stating that it is a final grade; I suppose you could indicate a final grade by using "4th six weeks" of an 18 week semester!

T:	gure	a
Т. Т	guit	U

	STUDENT ID	TES	PRO					GR	ADI
1.	860123	. 71	100	 	 	 	 	85	
2.	850432	58	0					29	F
3.	847910	29	0					14	F
4.	865012	78	0					39	F
5.	854312	91	70					81	В
6.	871254	80	0					40	F
7.	854236	63	90					77	C
з.	854798	79	65					73	C
7.	862367	81	80					81	В
10.	849998	58	80					69	D.
11.	856932	87	30					59	Ė
12.	843599	68	80					74	C
13.	848842	43	35					39	F
14.	840203	74	70					7.2	C
15.	856694	79	90					85	В
16.	841563	90	95					93	A
17	840001	85	100					93	Δ

NO. OF D'S = 1 NO. OF F'S = 6

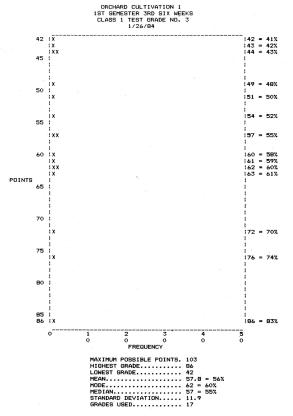
# Figure 10

1/2	6/84	ORCHARI	ASS 1 F							F	PAGE	1 OF	- 1
CON	KLIN					1ST	SEN	1ESTE	R 3F	D S	EX WE	EKS	
	STUDENT	ID#	1	. !	1	1	;	1	;	i	-	1	:
1.	ARLESS FRANCINE	860123	1	;	1	1	1	1	1	1	1	1	- 1
2.	BUNKER BETSY	850432	1	1	;	1	- ;	- 1	, 1		1	1	-1
3.	CHEESE CHARLIE	847910	!	1	;	1	;	, 1	;	:	1	1	
4.	DAWN DORIS	865012	1	1	1	1	;	!	1	;	. 1	1	- 1
5.	EAGER EDDIE	854312	1	1	. !	1	1	, 1	1	1	1	1	1
6.	FORD OPAL	871254	. 1	1	1	ï	1	1	1	1	. , 1	. 1	1
7.	GLENN GERTRUDE	854236	1	;	1	i	1 -	, 1	1.	1	1	1	

### Figure 11

1/2	26/84	ORCHARD	es Cu				1					PAGE	1 0	- 1
CON	IKLIN						1	ST S	EMESTE	R 3F	RD S	IX W	EEKS	
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4.	DAWN DORIS	865012		;	15;	151	01	601	1	;	;	1	;	;

Figure 12



In printing out reports, you have the option of listing student name, ID# or both; you could print one with just ID numbers to post outside your classroom door. That way you don't have to answer each student individually about what they earned, and at the same time you are not displaying the names for all and sundry who happen to be walking through the hall. The grade summary in Figure 9 is shown with just the ID numbers, the class rosters in Figs. 10 and 11 show both. Notice that you have the option of printing a blank class roster which will serve as a grade-book page, or of printing out updated rosters which include the grades. You may, with this second option, select which grades should be printed, so that you may include only tests, only projects, or all, as in the case of Figure 11.

The most interesting report is the statistical one (Figure 12), which can be for any given grade. This information cannot be done using VisiCalc unless you have the Advanced Version or one of the add-on programs which will allow you to sort your information. Notice that the printout appears at first to be upside down with the lower grades at the top of the picture, but when you rotate it 90 degrees counterclockwise, then the frequency distribution bars (shown with X's) are in their usual orientation with higher grades to the right.

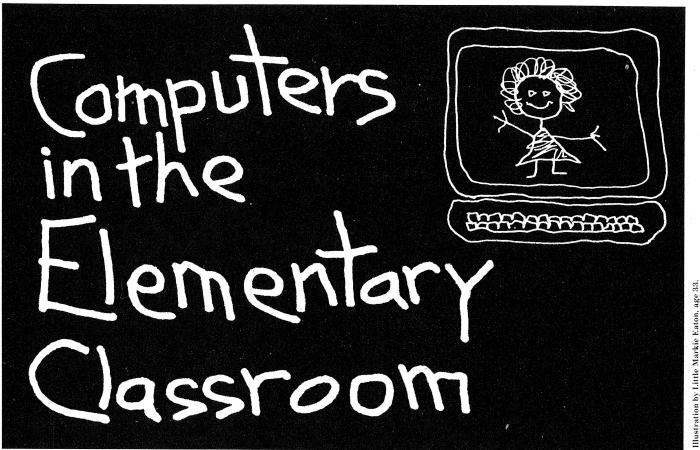
Figure 13

ARLESS FRANCIN		ORCHARD CULTIVATION 1 PROGRESS REPORT 1ST SEMESTER 3RD SIX WEEKS 9/12/83/ TO 1/26/84											
11/11/83		GRADE PERCENTS		AVG X % = PT									
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	PARENT SIGNATU	JRE											
BUNKER BETSY			ROGRESS REPORT SIX WEEKS 9/12	2/83/ TO 1/26/84									
11/11/83		GRADE PERCENTS		AVB X % = PT									
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	PARENT SIGNATU	JRE											

The progress reports (Figure 13) give the grades as percentages of the possible points, and show the weighting. In addition, notice that there are four possible comments which may be checked for each student. I am used to having a mark-sense card which will allow 55 comments, but then, that one must be read by a mainframe computer bought from a large company before Apple advanced technology. These comments are fixed, and are the same for all classes. The progress reports are printed two to a page, so they may be easily separated for mailing or hand delivery. (If you think Betsy Bunker's progress report would actually reach home by hand delivery, you haven't taught school recently!)

An additional, unexpected effect of a computer print-out is that the students will check out their work and let you know immediately if something is missing, which is an aid in keeping the grade book accurate. I post my most recent print-out on the board and am told almost immediately if there are any clerical errors! The students can also see exactly why their grade is what it is; without a print-out such as the class roster with grades, the students often lose track of what has been assigned and what they have or haven't done. You can print out a new grade sheet (class roster) anytime you wish so your grade book always looks neat.

I would conclude that for anyone teaching in a district or school which does not provide adequate computer services already, Grade Book Plus and Grade Master are much better programs, and will enable you to obtain much information on your students, and pass it on to them with your printer doing the most of the work. As between the two, only Grade Master prints out the graphical display of statistics. Any method which reduces the clerical work of the teacher is welcomed because then the time can be spent with the students, sharing both information and the enthusiasm for learning which should be a part of all our lives.



by Bevery Saylor

here are many uses for a computer in the elementary school classroom, many of which can also be effective for home use. You are probably sick of hearing about all the ways computers can be used to practice and gain proficiency in a subject area (known in the wonderful world of teaching as computer-assisted instruction). Though a computer can help to teach a new concept, it is a rare student who will be able to grasp a concept when taught this way. Some of the most potent uses of the computer, for both home and school, are: to help develop and improve critical thinking skills, to experience situations not normally in the child's realm of experience through simulations, and lastly, word processing.

We've all heard and read many arguments as to how and why games such as Pac Man can be beneficial; the need to develop a strategy, improves hand-eye coordination etc. Why not make use of software that will not only achieve these benefits, but will encourage children to think and solve problems? There are now so many quality programs available that will do this. The most appealing programs are those that are interactive (the user controls what is happening by manipulating objects on the screen), use good color graphics, have sound, contain different skill levels, and offer variety. The Learning Company has many programs that satisfy these requirements. (And they are fun too!) I have field tested the Learning Company's programs, in my classroom, for several years. I believe that they really do help students develop their critical thinking skills when used in a sequential order and reinforced by computer activities.

I'd suggest that students begin with easier programs before moving on to the more complex programs (those requiring a higher level of thinking.) Programs like Moptown Parade, Moptown Hotel, Gertrude's Secrets, and Gertrude's Puzzles (all available for the Apple) all deal with recognizing attributes (inherent qualities). In the classroom, a teacher would begin by using shape pieces and have students arrange them according to size, color, and shape. Once they understand the concept then the student should continue reinforcing this skill by playing the game on the computer.

The computer is an excellent bridge from manipulative learning (being able to move objects around by hand) to more abstract learning. How can classifying objects be applied to real life? When a child has to reorganize their drawers and still fit all the "junk" back in, it might help to think of what they learned from the attribute games. If they have six drawers, what are six major classifications that most of the "junk" will fit into? Besides learning to categorize, the user is also developing their hand-eye coordination by moving the objects around on the screen using the keyboard or a joystick. Sunburst Communications also has programs dealing with attributes, but their programs are mostly targeted for schools.

DesignWare's "Creature Creator" is an excellent interactive program that not only develops concentration and sequencing skills, but requires the user to notice similarities and differences. It is fun to use the computer to create a monster and then make it do a dance. The user has to simulate the dance being done by the creature. The creature can move its head, arms, and legs; each in two ways. The number of dance steps can be increased and there are three levels of difficulty.

Rocky's Boots (The Learning Company) might be even more practical for home use. It takes more computer time than is usually available in the classroom. The child learns how to build machines using AND, OR, and NOT logic gates. These machines are then used in games. Rocky's Boots is actually teaching about computer circuits, while developing logical reasoning. This requires a higher level of thinking. A child might then be stimulated enough to actually want to try and build their own circuits with batteries, wires, bulbs, etc. If the child is unsuccessful with Rocky's Boots, building the actual circuits using the real objects might help his or her understanding; or perhaps the program is above their "thinking" level.

Our (my class and mine) current favorite on our software list of hits is Apple LOGO. This is actually a programming language which can be enjoyed from kindergarten on up (including adults). Though it does help children grasp some mathematical concepts, it seems to help develop logical thinking. It can be as simple or complex as the user will allow. There is no complex language to master before you can program, LOGO is usually begun by using the part that consists of manipulating a "turtle" with a pen tied to his tail. By writing a series of ordered steps one can make the turtle draw graphics and use color. In the classroom, I encourage the students to get up and move around like the turtle in order to solve a particular problem. This is a marvelous learning tool for home and school use. Do you have a Big Track tank sitting unused? Dust it off. It moves very much like the turtle in Logo. Now have your children use it to make programs—not war! Apple LOGO can be used to write quite complex programs which consist of manipulating words, numbers, and lists.

The Factory, by Sunburst Communications, is another outstanding, interactive program. You make a geometric product by having machines on an assembly line punch holes, draw stripes, and turn the product at different angles. It is both fun and challenging. This goes hand-in-hand with the turtle portion of LOGO. The knowledge of angles that they gained from turtle geometry would help them be more successful here.

Children rarely have an opportunity to run a business. (Perhaps they will set up a lemonade stand if the weather is nice.) The Minnesota Educational Computing Consortium (MECC) has several simulations that let the students run a business on different skill levels. There is the chance to run a lemonade stand without competition. You can open a bicycle plant, but you will have competition, taxes, and even employee strikes. These too, are targeted for educational institutions. Good simulations require keeping accurate records, organizing your information making predictions, and making decisions. There are several excellent simulation programs that are better suited for home use (time consuming) such as Spinnaker's Snooper Troops 1 and 2 and In Search of the Most Amazing Thing.

"God Bless word processing" one of my students recently said when she had a large number of corrections and addons to make to a story she wrote. She happily went to the computer, inserted her file diskette and made the necessary corrections. Without a word processing program, she probably would have made very few of the necessary corrections. (Can you blame her?) Here is another excellent use of the computer for both home and school. Word processing when used effectively can really improve writing skills. It is easier to organize your writing when you can move words, sentences, and paragraphs around. The finished product looks so good when printed out. In many cases it is also easier to read than the hand written page. (Of course, it would require a printer to achieve maximum effectiveness) Our favorite word processing programs (for home and school) on the elementary school level, are Bank Street Writer or Homeword. Word processing is being used even at the first grade level.

There is a place in the school curriculum for drill and practice. If you child needs to practice a certain skill, why not buy a software program that will let you or them easily type in the information that needs to be practiced. Square Pairs, by Scholastic (they have an excellent family software catalog featuring software for Apple computers) lets you do just this. It is a game like Concentration. It does come with some ready-made games or you can supply your own catagories and put in the information.

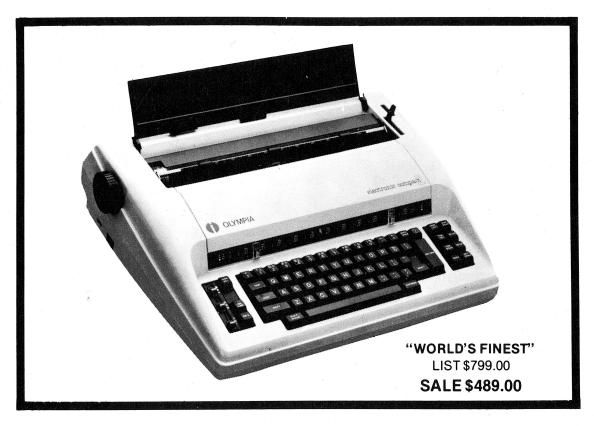
Having trouble getting a loved one to learn their spelling or vocabulary words? Spellicopter, by DesignWare comes with words already in the program, or you can type in your own words and clues. It is interactive; you control the helicopter using a joystick or keyboard. You fly through different scenes (there are obstacles) in order to rescue letters scattered over the field. The different skill levels keep it challenging at home and at school.

The Koala Sketch Pad offers some wonderful opportunities. Use this if you really want to develop hand-eye coordination. It is fun to use as a drawing tool. We use it to fill in the pictures we create with LOGO. Koala Technologies has some truly interactive software. Their spelling program, Koalagrams, lets the child move boxes with letters in them until they have them in the order needed to spell a word. Clues are given. You can even add your own words. While field testing this program, I had to unplug the computer to get some students to stop. They really had fun developing a strategy to spell the word more quickly. They loved being able to move their fingers on the sketch pad and having the boxes move on the screen. Wouldn't it be nice if more software developers add a sketch pad option along with the joystick option?

Developmental Learning Materials (DLM) offer several arcade game type programs that truly encourage students to learn their basic math facts. There are separate addition (Alien Addition), subtraction (Minus Mission), multiplication (Meteor Multiplication), and division (Demoliton Division) programs, as well as one that combines addition and subraction (Alligator Mix) and one that combines multiplication and division (Dragon Mix). These do not let you input your own math problems. These are appropriate for the home and classroom if you don't object to the violence of Space Invader-type games.

When used effectively, the computer can be a superlative learning tool, at school and in the home. What's most exciting is that the future is likely to bring even more useful programs for education, as our collective experience grows.

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# **EDUCATIONAL** SOFTWARE SAMPLER

by Joyce Conklin

"Psssst - are you sure you're doing the right thing for your kids?"

"Oh, be quiet, conscience!"

"But you know what they're saving - if your kids aren't conversant with computers, and soon, they'll be the next generation of illiterates; now would you want that?"

"But conscience, I don't know anything about those awful machines - in fact they scare me more than a little bit!"

"Nah-just spend some time with your kids and they'll teach you about the machine—you can learn together."

oes the above imaginary conversation sound like something that might have happened to you? How do you decided which "educational" software is right for your kids? There's so much to select from. Where do vou start?

There really is a tremendous amount of software currently on the market which purports to be educational, and you need some guidelines for selecting the most useful for your purpose. The earliest software was essentially "flash cards for the computer". It works, but you can accomplish much the same job with manual methods at considerably less expense. You should find software that not only addresses the particular segment of learning (math, English, reading, early concepts, etc.) which you need, but also utilizes the capabilities of the computer to react to the input of the child. These reactions should be non-threatening and helpful. It isn't good to indicate an error without guiding the child to the correct answer.

For pre-school and elementary students, color is also desirable; it's nice for secondary students but not as necessary as they will often be working with text rather than graphic material. Text on a color screen is often less legible than on a monochrome monitor. Another criterion could be the reputation of the company which produces the software, and their age-group specializations, including "children" over 21!

If you are really the type to research a topic thoroughly, you might discuss the selection of software with your local school teacher in charge of microcomputers. There are two annual books (The Book of Apple Software, and The Blue Book—with a yellow cover!) which list "all" (well, almost all) of the software available for the Apple. This article will attempt to give you a brief look at some of the educational software which is currently available, although it will only scratch the surface. My local county office of education librarian said that they had fifteen thick binders full of announcements and catalogs of educational software!

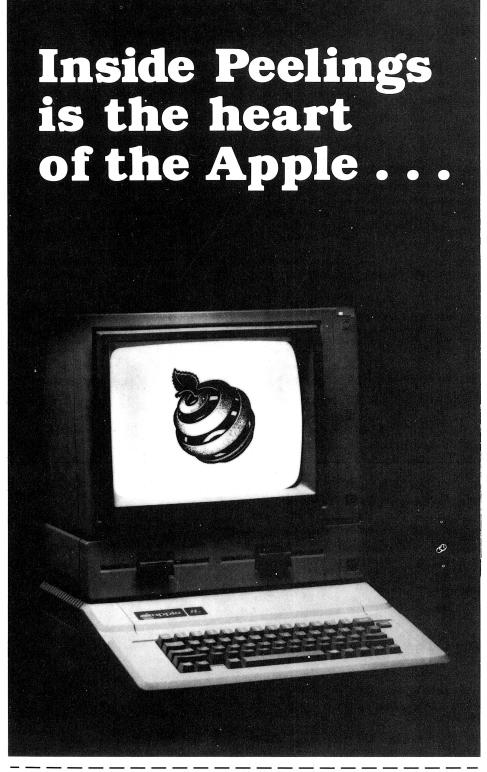
# Ages 4-10

Gertrude's Secrets The Learning Company 545 Middlefield Road Menlo Park, CA 94025 \$44.95

Using a flying goose and colored shapes, this series of programs teaches discrimination of shapes and colors, categorizing, solving a loop (Venn diagram) puzzle, following directions, sequencing, similarities and differences, and reasoning and problem-solving. If that sounds like a lot for a four-year old, you'd be surprised at what they can do. Each type of puzzle has both an easy and a hard version; the hard versions might be difficult for some children over 10! For the younger set, the games need to be demonstrated as the children will probably not be reading yet at age 4.

**Bumble Games** The Learning Company \$39.95

Find Your Number introduces the concept of a number line: Find the Bumble works with a matrix, like reading a map. The Tic Tac Toe game is 5x5 rather than 3x3 and continues play until all 25 locations are filled unless you press «ESC» to indicate a cat's game. Bumble Dots allows you to select the location of the next dot on a 10x10 grid and the program fills in the intervening line to construct a picture. Skills in this set of games included gaining spatial aware-



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ness, up/down, right/left, discovering game strategy, using standard number pair notation, and thinking creatively.

Moptown Parade The Learning Company \$39.95

Using creatures called gribbits and bibbits with various structural characteristics (fat/thin, tall/short, red/blue) the child learns matching and similarities, differences, opposites, pattern sequences and problem-solving strategies. The games range from Make My Twin and Who's Different to Who Comes Next and Moptown Parade, where the child needs to make decisions about patterns. Clubhouse has as its object determining the membership rule (only tall creatures? only reds?) but eventually everyone can join as each new game has its own rule. The manual comes with suggestions of ways to vary the games by using cards or dice.

## Ages 8-13

Microzine Scholastic, Inc. 730 Broadway New York, NY 10003

This magazine with a disk is published bi-monthly from September to May. There are four different programs per disk, running the gamut (on the particular issue reviewed) from a pick-your-own-plot story to a word ladder vocabulary builder. The directions will require middle grade (3-6) reading ability; the graphics are well done and the text fonts are large enough to be legible on any type screen. In the word ladder game, you need to select the word which the computer has in its memory but you may get three clues for each, although asking for a clue reduces your score. You can keep typing in new words without asking for clues; if it isn't the one the computer wants, it will beep at you but it doesn't cost you points. The level of difficulty can be easy or hard depending on how much you try to do it without clues. Word ladders may be created by the user and saved on a data disk. An excellent simulation and game involving hot-air ballooning is also included; the game portion can be played by one or two, and the second player may be the computer.

Gertrude's Puzzles The Learning Company \$44.95

Covering similar learning skills to those in Gerturde's Secrets, Gertrude's Puzzles contains more difficult systems. The manual also contains additional suggested games which expand on these experiences.

Moptown Hotel The Learning Company \$39.95

More games with Gribbits and Bibbits, the range is from the analogy game of Who's Next Door, through Change Me (like word ladders, but with creatures), Spot Me (find the one which is different from the rest), on to Moptown Map and Moptown Hotel where the player must discern or follow the rules governing who lives where. Hotel is a two player game which would be challenging for adults as well as children.

Bumble Plot The Learning Company \$39.95

An extension of Bumble Games, this set includes exposure to such skills as identifying positive and negative numbers, greater than/less than, predictions, identifying and plotting points on a grid, and developing reasoning skills. The most advanced game is Roadblock which is played against a (computer) clock; fortunately you can stop the clock while you plan your move, but you'd better be quick on the spacebar or the target will get away!

Fay: The Word Search Game Didatech Software No. 2301 - 1150 Jervis St. Vancouver, B.C. V6E 2C8

This find-a-word game utilizes a scuba-diver to find the words in the grid; the aim is to help the students to increase their sight-word vocabulary. This is a good idea but it doesn't seem to work on screen quite the way it says. The diver is to locate the word in the grid and then shoot at the columns and rows surrounding the word, eliminating the random letters of the grid, thus isolating the words from the list at the bottom of the screen. A few of the random letters disapppeared but even at the lowest level I was unable to get the shots to work completely, even though I was able to locate all the words. The program is said to work with either the joystick or the I-J-K-M keys; I could only make it work with the joystick. The game is a good idea but either the programming or the documentation needs a little more work.

Fay: That Math Woman Didatech Software

This program works exactly the way the documentation indicates. There are 6 levels to the program; #1 is 15 addition problems, #2 is 15 subtraction problems, and #3 a combination of both operations. #4 is 15 multiplication problems, #5, 15 division problems, and #6 combines all four operations. The program is designed to accept numbers 18 or less for the answers. Levels 3 and 6 play as games, with Fay going up the elevator for each problem correctly solved and being chased by "random numbers" if the student is too slow in giving the answers. The game ends when the Random Numbers catch up with Fay. The program also keeps track of high score, and in both this and the previous program you can toggle the sound effects on or off with Control-S. The program is also childproofed, in that when it asks the student to type in his/her name, it will check for and reject many common swear words!!

Ages 12 - up

Algebra Arcade Wadsworth Electronic Publishing Co. Belmont, CA 94002

One of the many programs which endeavors to teach in the guise of a game, this one- or two-player game really allows you to see what is happening. The user(s) should have been introduced to graphing of equations prior to this game to receive the most benefit, but it isn't entirely necessary. Ten "Algebroids" appear on the screen in random locations and the object is to construct an equation which will pass through the greatest number of these creatures. Along with the Algebroids there is also a Ghost and a Graph Gobbler which can wipe you out if your equation touches them. You can earn extra turns by accumulating 10,000 points or by knocking off the last of your ten Algebroids. The game has many options, including turning the sound on or off, which is a great advantage in the classroom! Other choices include saving the current game to a data disk, changing the range of the coordinates, selecting from one of six equation families rather than typing in the entire equation, use of a joystick instead of the keyboard, and controlling the time for each game. In addition to the actual playing field, you may also select the practice mode and draw several different equations for effect; during this phase, however, the Algebroids do not show up, so you also have training for visual memory.

Rocky's Boots The Learning Company \$49.95

This program truly defies age categorization, as it addresses Boolean logic in the guise of building machines and following electrical circuits. Users younger than 12 have a great time playing it; adults can still learn about both logic and electricity. There are clackers, thrusters, wires, AND, OR and NOT gates, and enough parts to delight an electronics fan! In the process of playing Rocky's Boots, which only comes after three levels of learning and practice, the user identifies positive and negative values, recognizes and avoids glitches, builds and debugs circuits, and uses combinatorial logic. You can then advance to Flipflops for more learning and practice before going to Rocky's Challenge which has 32 different games plus the opportunity to make your own game. This is a wonderfully exciting set of programs which will keep your child occupied for a long time that is, if she can pry you loose from the computer! Why not play together?

Fax Epys Computer Software 1043 Kiel Court Sunnyvale, CA 94089

A chance for one or two players to test their knowlege against the computer. The data disk contains four different categories of questions (Grab Bag, Entertainment, History, and Sports) and speed as well as the correct answer is important in determining your score. Your time is limited, but can be extended by earning enough points to exceed the bonus point value. This game is not designed to teach specific skills, as are the offerings of The Learning Company, but additional knowledge is the inevitable offshoot of trying your hand with these questions. With trivia contests being so popular, this is a welcome addition for those who may live alone.

An example of the type of program which should NOT be selected is one produced under a grant from the American Legion Child Welfare Foundation. To knock it is almost like saying you are not in favor of the flag, apple pie and motherhood. But . . .

Exploring Your Brain Epilepsy Foundation of America 4351 Garden City Drive Landover, MD 20785

The program has many Hi-Res graphics screens but they are not saved or loaded with a high-speed DOS so there is a lot of waiting time between segments of the progam. For some reason, none of the menus (I assume that's what should be there) are visible on the screen; it would be very disconcerting to a new user to have the screen go blank and the disk drive stop! I made it work again by trying all the keys until one caused the drive to come to life. In order to see some of the animated sequences (which are nearly invisible on a monochrome screen) the entire picture must be reloaded, which takes upwards of 30 seconds. There is a great deal of text reading (what's wrong with a book for this?) with the only "upgrade" being that the labels appear one at a time on the picture as the particular portion of the brain is described. There are also supposed to be self tests included but these screens were blank too! All the behavioral objectives in the world, and there are some included in the jacket of the disk, don't make up for a poorlyedited program.

As I said at the outset, this is only a sampler, describing some of the programs that are available. There will probably be outraged howls from manufacturers whose products have not been mentioned; we will cover other products and projects in future issues, guided in large part by what you tell us you'd like to see.

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# The Apple-University Consortium

# by Dirk Van Nouhuys

t the recent Apple stockholders' meeting, mostly Apple employees, a round of spontaneous applause met the announcement of an agreement between Apple and a consortium of colleges and universities to sell Apple products at deep discounts into the university world. This applause, which also greeted mention of the 10,000 Apple //e's distributed to California secondary schools, arose from the warm feelings Apple as a company has toward education. Not only does Apple see these programs as good corporate strategy, they make people at Apple feel good.

Neither Apple nor the universities will say what the discounts are, but an educated guess from university planning documents shows some students paying less than half market price, depending on the order.

For Apple it is a way to "do good" and take a bite out of a very special market.

For the universities it is a way to get in step with what they see as the inevitable growth of personal computers in our lives.

For us Apple users it introduce; many creative people who will make new software for all our benefit.

While the universities tend to be of the better known variety, they are very diverse in character; large and small, state and private institutions, protestant and Catholic, in all parts of the country except the deep south, oriented toward engineering and toward the humanities. Their planning and organization varies, as some had obviously just jumped on the bandwagon, while others were in a process of thorough and orderly planning. Note that two of the schools with most thorough and thoughtful plans were small liberal arts colleges, Reed and Brown. Personal interviews and an exclusive Apple Orchard telephone survey of 14 of the institutions revealed expectations and implementations as diverse as their characters.

All university spokespersons, however, shared enthusiasm for this program.

# What's in It for Apple?

This is a chance for Apple to learn about the needs of students and faculty, to grab the minds of an important group of new users, and to interest a world of bright programmers. In the words of Dan'l Lewin, Apple program director, "We want to capture that world of innovation for Apple."

Apple sees the universities as an important source of information about how customers react to their equipment and what they need. Brown and Drexel reported extensive plans to evaluate how the machine affects the lives of their students and we may expect papers and reports from them and other universities. Apple plans to set up a regular information gathering and exchange system among the members of the consortium, Apple, and software houses.

Some information has already been exchanged. For instance, when Cornell was evaluating Mac Pascal for its 2000-student introductory computer science program, they found it very attractive, but in need of some detailed changes to fit their requirements. Apple put Cornell in touch with THINK, the vendor developing this software, the changes were worked out, and all Apple (Mac) Pascal users will benefit.

Competitiveness is another motive at Apple. Steve Jobs and John Scully are very competitive men and their attention centers on IBM. IBM and DEC are aggressively pushing similar plans, and Zenith, Hewlett-Packard, and others have offered discounts to particular universities. Apple sees a chance to beat IBM and the others and seems to be having some success. While several universities are going to get the best deal they can from various vendors, many are sticking with Apple only. One administrator commented, "Both in the machine (Mac) and the discount, IBM is not competitive."

One school that has stuck to Macs and Lisas is Reed college. In fact its equipment list reveals not one piece of IBM gear. When I asked a spokesperson if this had anything to do with Steve Jobs having attended Reed briefly, he replied, "It must be a coincidence."

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### What's in It for the Schools?

Satisfying Student Expectation. Some universities cited the desire to attract students (Drexel attributes a substantial increase in enrollment to announcement of this and related programs, although Drexel is the only university that will require students to buy machines) and some universities have been receiving calls from students choosing among universities asking what computing arrangement will be available to them. Conversely parents who expect their children to apply call to ask what home computer they should buy. Calls like that come more to universities that draw from affluent classes, e.g. Stanford and Columbia.

Publicity. In some cases the universities are eager to polish their public image by exposing this program. Drexel, Michigan, Brown, and Carnegie-Mellon are obviously proud of their involvement and see a value to the university in having it known. Others seem indifferent to publicity. One large state university is forbidden by state law from publicly stating their involvement. (The observant reader will notice that I state 24 universities are involved but the list below shows only 23.)

Education. Most universities mentioned specific educational purposes. Several besides Cornell plan to use Mac Pascal as the basis of their introductory programming courses. They admire Think's instant Pascal on Mac for teaching programming because it short circuits much of the compiling and associated procedures in a typical microcomputer Pascal, which the students have to spend hours learning before they learn to program. "This will really change what we do now," commented Pricilla Huston at Rice. Other plans include development of language skills through programs like spelling and diction checkers on Mac at CUNY, and use of the high resolution screen and character creation for work in unusual alphabets at Brown, where half of the religion department has signed up for Macs partly because of the possibility of Hebrew editing.

Cost Reduction. A few universities, such as Drexel, hope for diminished load on central computing facilities. Others, such as Reed, hope only to slow the growth in demand on central facilities. Cornell expects eighty percent of the computer cycles on campus to be at the work station in three years. Others, e.g. Columbia and Stanford, expect the load to increase because more micros mean more terminal emulation. In general, it is schools with limited commitment to networks who hope micros will reduce the load on central computing, whereas those with sophisticated networks or plans for them expect it to increase. Note that where the cost is reduced, the reduction will usually come from students and faculty paying for capacity the university now pays for.

Keeping up with the Future. Through the variety of motives runs the thread of keeping up with the future. The universities foresee the day when knowledge of personal computers will be an integral part of education and are climbing onto the bandwagon. "We recognize micros are the future, we are taking this opportunity Apple has offered us to partake at a reasonable price," said Patrecia Peters at Columbia. "We want to establish the leading edge computer environment in the world," said Richard Phillips at the University of Michigan and adds, "Soon an engineering student will need to be as proficient in computing as he now

needs to be in math."

The list of universities that have announced participation in the consortium is as follows:

Boston College
Brigham
Young
Brown
Carnegie-Mellon
University of Chicago
City University of
New York
Columbia University
Cornell University
Dartmouth College
Drexel University
Harvard University
University of Michigan

Northwestern University
University of Notre Dame
The University of
Pennsylvania
Princeton University
The University of
Rochester
Reed College
Rice University
Stanford University
The University of Utah
The University of
Washington
Yale University

# What's in It for us?

By us I mean Apple users. The answer is programs beginning in a year or two. The article Apples in Music Education in the December '83 issue of Apple Orchard, gives examples of how programs emerge from universities into the market place. The programs we will see first and most often are terminal emulators. The big network universities are not satisfied with the packages that come with Lisa and Mac and plan to do their own. I'm not either and asked several interviewees to remember me when they had something ready to run. Several mentioned text editors, not, in this case, because the programs available were unsatisfactory, but because with a plentiful supply of able student programers, it is cheaper to write one than obtain it commercially. Graphic programming was mentioned, particularly architectural and engineering drawing programs for the Lisa.

# Who Gets Hurt?

Dealers feel they do. It is hard to pin point the number of people eligible for this program because of different distribution criteria at different universities, but it probably approaches half a million. These people will be able to buy Apple equipment in some cases below fifty percent of list price. CUNY alone has 140,000 students and 70,000 faculty. Dealers see themselves priced out of this market. In many cases members of the university consortium have seen Macs well before loyal dealers, another source of resentment. At least two dealers near participating institutions have dropped the Apple line.

# **How It Works**

Some universities are buying the equipment for themselves and letting students and faculty use it. In some cases personal and institutional ownership is mixed. But in most cases students, faculty, and staff (but not, alas, alumni) get to own a computer.

Let us say you are a student, how will you get your computer?

Choice & Payment. If you go to Drexel next year you will have to buy a computer and it will be a Mac. (You will be

able to get a low-interest loan to buy it, financed by a bond issued by Drexel). If you go to Reed you will have the opportunity to have a Mac for the price of a \$500 deposit refundable when you graduate.

But in the majority of cases you will buy a computer with your own money. You will buy it at a place like a computer store, or a discount store, where computers are on display, or from a list. You may have a choice among IBM, DEC, or Apple equipment, and other manufacturers in a few cases; you may have a choice of a range of Apple equipment, or only between Mac and Lisa. There will usually be a consultant to answer your questions.

Training. Most universities will offer short seminars, part of a day to a day, before you choose your computer. Some universities will offer training in applications, usually through the computer center, once you have chosen your machine, but many will not.

Maintenance. There will be an Apple level I service center available to you, usually run by the university, in a few cases run by a local dealer under contract. In most cases there will be an arrangement to get a spare machine while yours is being repaired. The standard Apple insurance package will be available.

Sounds pretty good, doesn't it?

Software. You will get the software that comes with the Apple product. A few universities plan to offer software in their "computer store" or in their college book stores, but most do not.

If you are in a university with a sophisticated network environment, you may have another source of software: the net. In many cases it is possible to load programs from central files to your microprocessor, or to copy them onto your disk.

If it is a piece of commercial software, the copyright and perhaps the copy protection have thus been circumvented. This is a matter of concern not only to software vendors but to university administrators. In most cases they are anxious to leave in tact the system of software distribution that exists for personal computers. At Cornell, for example, they have gone so far as to purchase copies of commercial disks to the same number as they have bought machines. The actual programs are then called down from the network as needed while hundreds of pristine disks sit unused in locked drawers.

The university administrators I talked to would like personal software companies to offer campus-wide licenses at a suitable fees, as large-machine software vendor offer campus-wide or company-wide licenses, but since you can then copy the disk and send it home to your mother, it's not clear that licensing will solve the problem. Even if the program sent home to your mother on a disk was a text editor developed at the university, some software vendors see a lost potential sale.

### Concerns

We hear today criticism of the increasing intrusion of computers into daily life. I heard very little of this from my sources on the campuses. When I asked about opposition to an institution's participation in the program I often heard an eloquent silence. The question often seemed to surprise people. Some objections were reported however. They usually had to do with allocation of university resources or, where only Apple equipment is being offered, complaints from people dedicated to the IBM Personal Computer (usually people in the humanities).

However where the program was being thoughtfully planned administrators did foresee operational problems. Perhaps Brown is the most sophisticated in this area. They mentioned the effect on dealers, and the issue of software piracy. (Some universities are not including Apple II's and III's in the offering specifically to mollify dealers.)

The leading concern at Brown, where students buy their machines with their own money, is that the student body will be divided into haves and have nots and I heard concern about inequality from several other schools. Other problems are the student telephone system, which Brown believes "will be wiped out next quarter by people getting access to time sharing." Theft, the noise in a dormitory full of ImageWriters, and reduction of personal interaction are mentioned.

# **Enthusiasm**

One note was to be heard from everyone I talked to. Enthusiasm. "We are very excited... computers are neat appliances to help people learn and communicate," said Bill Shipp at Brown. "(The Mac/Lisa family)...is very exciting...It will change how we teach...a utility," said Douglas Gale at Cornell. The Reed college plan declares: "The benefits are enormous." "We're enthusiastic," said Mary Drubin at CUNY.



Circle HelpCard No. 6

# MAC-INATIONS

by Scott Knaster

# The Birth of a Product

As you probably know, articles for monthly magazines are usually written at least two months before the magazine's publication. Although it's not good form to mention this fact, I think it's important to point out that this month's column is being written just days after Apple's introduction of Macintosh at the Apple Stockholders Meeting in Cupertino. From our sometimes distorted view here in Silly Putty Valley (as Apple Orchard's Editor/Publisher Peter Weiglin calls it), the introduction can be summed up by saying this: It made a splash.

First, Apple stirred up the waters by running its remarkable "1984" commercial in 11 cities during the week before the introduction. It was shown in specially selected places only — the ten largest cities, plus Boca Raton, Florida, home of another popular personal computer company (hint: it calls its computers by initials instead of names). The TV commercial created such interest that newspapers and TV stations began calling Apple to get more information so that they could run features about it. For one final blast, Apple placed "1984" in the Super Bowl, giving 45 million viewers a look at something even more bizarre than Joe Theismann's passing.

After the Super Bowl commercial, the tidal wave was on. By the time Apple's official introduction came on Tuesday, January 24th, several major newspapers had already published pictures of the "unannounced" computer, and Mac made its network TV debut that night on ABC, CBS, and NBC news programs. The February issue of *Apple Orchard* appeared on Announcement Day, as did several other publications. By Wednesday, the day after the announcement, it seemed as though all of America had heard of Apple's new computer.

And what about the Stockholders Meeting? As someone remarked while employees, stockholders, and other interested parties filed into DeAnza College's Flint Center that morning, the real news would have been if they announced something that nobody knew yet. It was true that everyone knew what was coming. The corridors of Flint Center were filled with Macintosh boxes and posters. There were no mysteries now, but Apple still wanted to make the official announcement with a flair.

The meeting was an strange fusion of a company conducting its business and a corporate pep rally. Apple Chairman Steve Jobs, who guided the Macintosh project, presided over the "new product introduction" part, which overwhelmed everything else. When Jobs walked out with a grayish carrying case, knowing members of the audience applauded and hooted. Jobs flashed a grin as he set the case on a pedestal and walked to the lectern. After a brief introduction, the now-classic "1984" commercial rolled on a giant screen

above the stage. When it was over, Jobs went to center stage and pulled the Macintosh out of its carrying case. The audience erupted. (The auditorium, which seats 2600, was so jammed that officials would not permit anyone else inside, much to the dismay of those who didn't get there in time.)

With the giant screen mimicing the Mac, the audience was treated to Macintosh's first public demonstration. It began by rolling "MACINTOSH", in screen-high letters, from right to left, reminiscent of the opening titles for the 'Rocky' movies. As the demo continued, several spectacular screen shots appeared, among them a Chinese woodcut (which can be seen in the Macintosh brochure) and a digitized image of Jobs. This picture was titled with one of the favorite quotations of Chairman Jobs: "Real Artists Ship" (products, that is).

Finally, as the demo ended, the Macintosh was about to do something which no one had expected. At the press of a mouse button by Jobs, it began to speak. "It sure is good to get out of that bag," said the Macintosh. It then reminded us



of that old saying, "Never trust a computer you can't lift." And it closed by turning the program over "to a man who's been like a father to me—Steve Jobs." Jobs explained that the hardware for speech was built in, although software to take advantage of it was not available immediately.

One other interesting point was casually but intentionally made: Jobs pulled the computer out of the bag, plugged it in, and it worked. It took about 10 seconds. Of course, the mouse and the keyboard were al-

ready plugged in. If not, it probably would have taken another five seconds or so. The subtle point here was, of course, that Macintosh's ease of use extends to ease of setup. In fact, adding peripherals is just as easy. Apple's printer, the Imagewriter, comes with a cable which plugs directly into the port on the back of the Macintosh that's labeled with a picture of a printer. A modem goes into the

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BOX 550, BARRINGTON, ILLINOIS 60010 Phone 312/382-5244 to order connector that has a picture of a telephone above it (you're starting to get the idea). Naturally, the external disk drive plug has a picture of a disk drive above it. Setting up your Macintosh, no matter what the peripherals, should be extremely easy.

### But what does it do?

One thing that Macintosh did not have on its birthday was a ton of software. At the same time, however, it seems to have unprecedented support from major software developers, who not only have said that they are writing Macintosh software, but also have gone out of their way to say wonderful things about the machine. The heads of three of the software biggies, Bill Gates of Microsoft (creators of M-BASIC, Multiplan, and MS-DOS), Mitch Kapor of Lotus (Lotus 1-2-3), and Fred Gibbons of Software Publishing (PFS), actually appear in Apple's Macintosh brochure!

The add-on hardware story is similar: very little right now, with the promise of more to come. In fact, the time warp between the writing and the publishing of this column should have increased the number of available goodies. Here's a look at a few selected things that are out or coming, hardware and software, from the two most significant companies:

From Apple Computer:

### **MacPaint**

You've read about it, you've seen it — heck, you probably already own it (if you've got a Mac, of course). There's not a whole lot more to say about this showcase of Macintosh's graphic talents. After using it for a while, you appreciate the little (and not so little) touches that Bill Atkinson and his cronies threw in: using the Option key in FatBits to temporarily change the pencil (for drawing) into the hand (for scrolling); the realistic simulation of a spray can; and the way the selection rectangle, or marquee, really looks like a marquee. Also, isn't this the first piece of computer software to include a picture of the author? (Pull down the Apple menu and choose About MacPaint).

There are also a couple of nice touches which should become a standard part of every application running on Macintosh. The first is the wonderful "Print catalog" command, which produces a printed miniature of every Mac-Paint document on a disk, which can be invaluable in identifying which is which. For a spreadsheet or word processing document, the miniature could give some sample information to hint at the contents. The second thing that should be standard is the way the Fontsize menu shows the best-looking sizes for each available font by presenting them in a distinctive (outline) style.

# **MacWrite**

MacWrite is probably as easy as word processing can be right now. This is the way word processors without a zillion features always should have been. A lot of MacWrite's neatness comes from the Macintosh user interface. It's responsible for banishing control codes to Never-never Land, simplifying insertion, deletion, replacement, and movement of text, and great flexibility in the use of fonts and typestyles, but MacWrite adds one great ease-of-use device: the ruler. The ruler controls 6 different formatting features: left

and right margins, paragraph indentation, tab settings, line spacing, and text alignment (justification). By making each of these things visible, MacWrite makes word processing a lot less frustrating for many users. In fact, it would have been better still if MacWrite made those other two invisible nasties, the tab character and the carriage return, show their faces, at least as an option.

Word processing fanatics love to create fifteen-page charts of features and see which word processor has which. The most feature-laden program is probably WordStar; it is the deluxe combination pizza of word processors. MacWrite, on the other hand, would fall far short in a feature comparison with WordStar, but it certainly has plenty of features for most writing efforts of most users, and it even has a few things that WordStar (and most other non-Lisa technology word processors) can't touch, such as being able to "paste in" text and graphics created with other tools, and the ability to change fonts, typestyles, and sizes, all without those slimy old control codes.

# External disk drive

Like any system with an optional (rather than standard) second disk drive, the second drive adds convenience when using most programs, and will probably be a requirement only for some large systems, such as accounting software. The drive plugs directly into the back of the Macintosh and adds another 400K bytes of storage to the system.

# Numeric keypad

The 18-key keypad gives you the ten digits, (PLUS), (MINUS), /, \*, comma, enter, clear, and decimal point. If all you're doing is entering numbers, you don't even have to hook up the regular keyboard.

# **MacTerminal**

This tool turns your Macintosh into a terminal, either a VT-100, VT-52, or standard dumb TTY. With the addition of some Apple datacomm hardware, your little Macintosh can behave like a bulky IBM 3270 terminal. Of course, MacTerminal follows the Macintosh user interface standards, so you'll see familiar windows, pull-down menus, and editing techniques here, such as cut and paste with other applications. MacTerminal also provides a great visual effect that it borrows from the VT-100: smooth scrolling. This means that text scrolls up dot by dot instead of line by line. It looks like there really is a scroll of paper inside the machine and someone is simply turning it one way or the other. Terminal emulation can be fun.

# Assembler/Debugger

This is the first tool that gives a programmer the capability to create an application using the full Macintosh User Interface Toolbox without using another computer, such as a Lisa. It includes an editor, a 68000 assembler, and a debugger. The debugger includes an interesting feature, the capability of being driven by a second Macintosh, so that the program being debugged can use more memory. Very nice.

A side note on other Macintosh development environments: the preferred way of doing things remains the Lisabased development system, which lets you program in Pascal or Assembly language. There are several Macintosh

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BOX 550, BARRINGTON, ILLINOIS 60010 Phone 312/382-5244 to order languages out or planned, including Apple's MacPascal and MacBASIC, and Microsoft's MBASIC. All of these allow access to some but not all of the User Interface Toolbox.

# **MacProject**

Scheduled for release in the second half of this year, Mac-Project's design will be taken in part from LisaProject, a project scheduling tool which uses lots of graphics to help you figure out what's going on. Tasks are entered into a document by drawing task boxes, and relationships between tasks are created by drawing lines between boxes. LisaProject has won a lot of praise as Lisa's most innovative application, so MacProject should be interesting.

### **MacDraw**

Another Lisa refugee, MacDraw differs from MacPaint in that it is structure-oriented; that is, unlike MacPaint, when you draw a rectangle or type in a sentence, it remembers that it was a rectangle or a sentence, and you can select it later and move it around, or change the line thickness or typestyle. It also remembers things that are placed on top of other things; if you draw a turtle, draw a baseball on top of it, then drag the baseball away, the turtle will reappear. MacDraw is also scheduled to be out in the second half of 1984.

From Microsoft:

# Multiplan

This is an all-new version of Microsoft's nifty spreadsheet program. For old-time VisiCalc users like me, Multiplan starts off with a great idea: formulas can contain two kinds of cell references, relative and absolute. Since most spreadsheet cell references are relative, this means that a group of cells can have exactly the same formula in each cell. This does away with one of VisiCalc's hardest to use, yet most commonly required features: replication.

Multiplan is a great example showing that Macintosh software can also be extremely powerful. Multiplan includes many advanced spreadsheet features, including sorting of rows, a very clever way of dealing with circular references. and the ability to link a cell in one spreadsheet to a cell in another spreadsheet on the disk.

Microsoft has four other Macintosh products which are out now or will be out within a few weeks. These are Microsoft BASIC, the world-famous programming language; Microsoft Word, a word processor which features all the good Macintosh things like multiple fonts, styles, and sizes, mouse editing, pull-down menus, scroll bars (including horizontal), plus a few more features than MacWrite, such as footnotes, glossaries, and multiple document windows; Microsoft Chart, a graphics system which takes data that you gathered by hand or created in someplace like Multiplan and makes it into a bar, line, pie, or any of several other options; and Microsoft File, a data management program that lets you format your own files and select records in lots of different ways.

# What the Future Holds

Apple Orchard Managing Editor Gene Wilson has wisely advised me against giving a tease about next month's column, since that allows me the maximum flexibility in case something comes up (which is to say, I'm never really sure what I'm going to talk about that far in advance). All I can guarantee is that each column will contain stuff of interest and amusement to Macintosh users, prospective Macintosh users, and other curious parties. I hope you'll stay tuned.

By the way, I'm conducting a poll, folks. In reading the many magazine articles about Mac recently, I was amused by the way that almost every writer took a different stab at describing the size and shape of a mouse. The most popular version was "like a pack of cigarettes," but one writer insisted that it was a "pregnant pack of cigarettes." One magazine said it was like "a stick of butter." Hmmm . . . wonder where he buys his butter? My favorite specification asserted that a mouse was shaped like "a square hockey puck." You bet.

Of course, none of these is really good, but pregnant cigarettes and square hockey pucks suggest that even more bizarre descriptions are possible. This is your chance. Send me your favorite mouse descriptions, cute or precise, and I'll share the best ones. What have you got to lose? Send those mouse descriptions (and any comments you may have) to:

Mac-inations Apple Orchard P. O. Box 6502 Cupertino, CA 95015.

Thanks very much. See you next month!



# Something no modem has ever said before.



If you're looking for a premium modem without a premium price, here's a word of advice: Apple.

Introducing the Apple Modem 300. And, to

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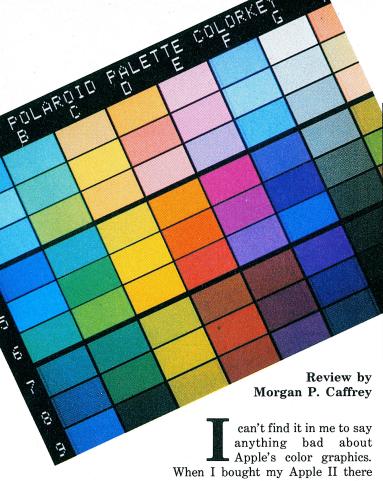
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were four colors: black, white, purple and green. Now, in those days that was two colors more than any other computer offered, if they offered Hi-Res graphics at all, which they didn't. A motherboard revision later enabled two additional colors. This is the basic complement shipped by Apple today, a million computers later. Still, more colors, and certainly different combinations of colors are desirable.

The Hi-Res graphic display can be a wonderful tool for modeling data, designing a floorplan or just daydreaming with a joystick or an Applesoft program. There is a large and still-growing number of programs which either create graphics or copy the individual pixels of the graphic image to a printer. Apple sells a very viable plotter with many colors available to copy graphics onto paper.

But Polaroid has found and filled a niche I hadn't known existed. The Polaroid Palette translates the graphic image to a color slide or to a 60-second snapshot and allows you to select any six out of 72 colors. That's right, seventy-two colors.

To accomplish this (no small) feat takes a good bit of hardware. The hardware consists of a single circuit card and some connecting cables, a black box wherein the photographic magic occurs, and lastly either a 35mm camera body or a specially adapted box to handle standard Polaroid color film.

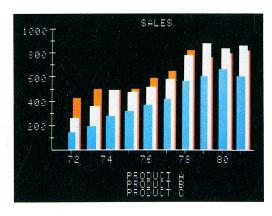
The trick is neatly done. Just pass the video signal out of the Apple to a connector on the Palette box and attach a second cable to channel the video image on to your working monitor. (If you are like me, you haven't invested in a color monitor and have been viewing color in green or amber for a couple of years.)

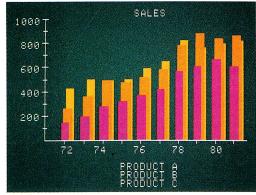
Inside the Pallete box is a black and white video screen a couple of inches big, facing towards the camera opening. A wheel has one open and three colored filters to allow the video image to be filtered through various tints. The Palette

# POLAROID PALETTE

software takes control of the wheel and analyzes the colors produced by the bit in the graphics area of memory. It then manipulates the colors delivered to the film by allowing different portions of the screen to be transmitted through one or more of the filters for varying lengths of time.

The only reason I got this intimately involved with how the colors are done is that we wanted to make the machine do its magic with the new and wonderful Apple //e 16-color double-Hi-Res introduced in the January Apple Orchard. (Inevitable Note: back issues are still available at \$3.00;





Samples of Polaroid Hi-Res Graphic Plots

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No. of keys
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Size of overlay
Size of case
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The KEYPORT can assign an entire command, or string of commands, to a single key. This greatly increases user and programmer efficiency, and decreases the frequency of syntax errors. A graphic overlay designates which of the 717 keys are activated, and these keys are logically grouped and color coded to organize workflow and increase user concentration. A booter diskette is linked to the overlay, and activates the particular set of keys.

The KEYPORT 717 does not disable the standard keyboard. It is connected to the computer via the game port to allow both the keyboard and the KEYPORT to be used concurrently.

POLYTEL's initial software packages include frequently used and popular programs (BASIC Programming, VISICALC, and THE FARM) with word processing and other programs coming soon. Your productivity will grow while using the affordable KEYPORT system.

# **BASIC PROGRAMMING**

The BASIC Programming overlay includes keys for all BASIC and DOS commands PLUS features like AUTO-LINE NUMBER, four-directional non-destructive cursor for editing, AUTO-REPEAT for all keys, user definable keys, COLOR keys, and more.

# **VISICALC**

The VISICALC overlay includes all numeric, formatting, and text capabilities in an easy-to-use layout. Spreadsheet construction and labeling is now easier through the use of grouped and understandable single key commands. Other features include eight directional cursor control, printing macros, user definable keys, and a screen memory map for one-stroke cursor positioning.

### **EDUCATION**

THE FARM is the beginning of an exciting educational line of software packages. This extremely colorful overlay has a farmyard scene in which your children can identify farm animals, ask questions, play games, or even write a story about the experience.

# **PROGRAMMERS**

The KEYPORT 717 is not only super User Friendly, but also Programmer Friendly. In addition to using the packages described above, you can design your own applications and overlays around the KEYPORT. New applications can be programmed easily, without menus and syntax analysis, because every function can be associated to a unique key.

Every KEYPORT comes complete with a set of software tools and two template programmer overlays to help you custom design a KEYPORT overlay for new or existing programs. Potential applications include business, home use, education, process control, and automation.

Copyright protection for your program is enhanced by requiring the custom overlay for its use.

# **SYSTEM REQUIREMENTS**

At present, the KEYPORT 717 is compatible with the APPLE II, II+, and IIe. A 48K memory and one disk drive is required. No interface card needed. The cable, booting diskette, programmer overlays, and BASIC Programming package are included with every KEYPORT 717.

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software disks to save typing are \$15.00.) Unfortunately this was not possible because the Palette software was written specifically for the six color bit-meanings of the Apple II Plus. Polaroid may adjust the software to take advantage of the //e's double-density graphics, depending on public demand.

According to Ian Gilmore, Polaroid's representative, the response of the business and graphics community has been very warm. Companies that were developing graphed versions of their data can now translate the information to a slide (using the companies' colors if desired) and show the slide more easily than it could show the Apple's screen to a crowded room.

For the advanced or production environment user there are several advanced features:

A batch-mode program allows for a sequence of images to be copied or several copies made of a single image with a minimum of operator supervision. This requires an autowind option for the camera, however.

A "fill" mode allows for the effects of the video "raster" lines to be minimized, allowing for more solid-looking solid colors.

If even 72 colors are not enough a color editor is provided to allow you to experiment with creating different colors of your own.

If you have created image files in Pascal you can use "ConPas" to convert the images to a form usable by the Palette.

The cost for the entire system, including software, camera, film loader, print-adapter and main palette box is \$1500.00. In many organizations this cost could be repaid during the first sale, but certainly in a short time compared to the equipment lifespan.

The manual is lucid and professionally printed. The system worked as advertised the first time. However, the system is flexible and there appear to be many variations and adjustments which can be done to alter the effects somewhat. I imagine a seasoned photographer will make faster progress than a complete novice but both will be able to do well enough with the system.

The version I tested was the October 1983 version and supposedly works in conjunction with at least the following graphics packages:

Apple Business Graphics

Apple Graphics Tablet (soon or immediately to be rereleased)

Apple Plot

Data Plot

Executive Briefing System

Higher Text

Hi-Res playground

Visiplot

Just bear in mind that software testing is done with the version in hand and new releases of the above products might conflict with compatability. All in all, the Palette is a neat way of getting photographic "hard copy" of a screen display, in more than full color.

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# Apple Education Foundation

# by Lenore Wolgelenter

ost of us went to school back when an Apple for the teacher was a cute cliche, bringing to mind a painting by Norman Rockwell. A little kid, school books tied with a strap, gleam of mischief in his eye, holding a bright and shiny Apple in his hand. Mischievous kids (and teachers) are still around, though perhaps not the book straps or gifts of shiny fruit. Apples, however are as popular now as they were then; only the form and function have changed.

Apple Computer, Inc. started going to school at about the same time it became a corporation. Many corporations have



a commitment to fundcommunity educational projects; however, very few have had that commitment from their inception. Early in Apple's history, employees saw their product's potential as a learning tool in the education process. According to Carolyn Stauffer. the director of the Apple

Education Foundation, the organizational structure was up and functional within 6 months. This set a precedent for any funding agency. In addition, the Apple Education Foundation is unique in that it gave new, state of the art computers to support projects as opposed to dollars or dated, discontinued equipment.

# The Granting Process

As mentioned above, all Apple Educational Foundation grants are for equipment. This year, over 1400 applications were received. Each was carefully reviewed by the foundation staff, educators and computer people. After this initial review, 97 applicants were asked to submit a detailed concept paper. Factors taken into consideration include creative and innovative uses of microcomputers as learning tools. Much work has been done with the computer as a CAI

(computer-aided instruction) tool for drill and practice. In order to be considered for this equipment grant, the applicant must now go further with the computer and create an interactive learning environment for students or teachers. Two of the many examples given in the applications include using the microcomputer for the development of mathematical understanding and intuition; or development cooperative and joint problem solving curriculum.

After several long sessions of reading, rereading and discussion, the successful candidates (about a dozen) for 1984 were



chosen to receive 30 Apple //e computers, and other necessary equipment to fulfill their projects. Included in the award are 4 modems so that the grantees can communicate with each other and create a supportive, sharing network. This year's winning applications include programs for:

- Gifted Science Students in Rural Appalachia. This program includes 11 schools in a wide geographic location. The schools' student population is mainly low income, native American. The goal of this project is to develop a network between the schools and the university to assist gifted students, creating a computer "scientific network" for the region.
- Micro-Computers for Individualization and Acceleration in Instruction for Dyslexic Students. This grant, at the Jemicy School in Maryland, will work with 113 severely dyslexic students in the areas of reading, language arts, math, social studies, music and art. Many of these children are already familiar with failure in a traditional school setting. The project directors will work in conjunction with John's Hopkins University to create an individualized, multisensory program for these children.
- Creating and Using Local History Databanks. Subur-Continued on page 77

# Apple's new ProDOS is pro Thunderclock

When Apple designed their new ProDOS operating system for the Apple II family, they included an important new function—the ability to automatically read a clock/calendar card. Nice touch.

It means that every time you create a new file or modify an existing one, the time and date are automatically recorded and stored in the CATALOG.

Re-enter BASIC by pressing

Using a Clock/Calendar Card

Each time you update a file, ProDOS performs a JSR (Jump subroutine) to memory location 48902 (SBF06). This is the entry into the DATETIME routine. If there is no DATETIME routine findstalled, there is an RTS in this location.

and then pressing (RETURN).

(CONTROL)-(C)

Now you can instantly know the exact time your files were last updated.

Apple could have chosen any clock for ProDOS to recognize, but they chose only one.

Thunderclock. It's the only clock mentioned in the ProDOS manuals.

ProDOS User's Manua

That's a nice stroke for us, but it's even better for you. Because, in addition to organizing your disk files, Thunderclock will add a new dimension to all the new ProDOS-based software. For instance, with business or communications

software you can access a data base or send electronic mail automatically, when the rates are lowest. Even when you're not around. And that's just a start. The better you can use your Apple, the better you can use a Thunderclock.

Thunderclock gives you access to the year, month, date, day-of-week, hour, minute and second. It lets you time intervals down to milliseconds and is compatible with all of Apple's

Thunderclock comes with a one-year warranty, is powered by on-board batteries and runs accurately for up to four years before simple battery replacement.

languages.

If you want to make ProDOS really produce, take a page from the manual—get yourself a Thunderclock the official ProDOS clock.

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# What the average personal computer user doesn't know about the International Apple Core could fill the next twelve issues of this magazine.

If you're like most Apple users, you don't realize the many benefits of an IAC membership. Or what it can do for you and your computer.

# So what's an IAC?

International Apple Core™ is a nonprofit organization of Apple users and user groups. We are dedicated to providing education, information and support to users of Apple and Apple-compatible products.

We aren't just a club of clubs. You as an individual can enjoy all the special benefits we have been providing user groups since 1979. You will be able to share information on new applications. Or learn the latest on products. Or keep up on Apple events. And you can receive specialized training.

If you'd like to join a local user group we can point you to one in your area. Or help you contact other Apple enthusiasts around the corner or around the world.

# A membership that pays you.

As a member of IAC you practically get paid with what you will save. By joining you will save nearly \$20 on our electronic spreadsheet,  $IACcalc^{TM}$ . Not to

mention all the other benefits only available to you as a member.

By the way, we'd like to mention those benefits.

# Information, please.

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With your membership, you are eligible to receive our *Disk of the Month.* \$30 brings you a subscription to user contributed software. Each one presents you with themes like games, education

or a potpourri.

In the past, IAC has given you seminars and conferences.

And you will always find us at the trade shows.

Special-interest and local user groups are a wealth of information to resolve your questions and problems. And we can help you find them.

# Get an education.

You can be assured of many educational benefits through our software programs. The Educational 3Pak™ is



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# INTRODUCTORY MEMBERSHIP

Don't miss our great introductory membership the first in an ongoing series of theme packaged programs. It contains three disks offering programs to help you learn Applesoft and Machine language with a series of Math Tools.

If you are a beginner to Applesoft, our Applesoft Tutorial disk is for you. It offers you a step by step learning plan teaching the uses of syntax and its applications within a



program.

Our Education disk presents several programs that are fun to learn with. And it's oriented to the younger setages 4 through 10. Children will enjoy Apple Array, Fred Fraction, Apple Barrel, Ad Drills and more. This disk contains an outstanding program for the handicapped called Voice Print. By using the cassette input at the back of your computer the child can actually generate graphic voice prints on the screen. An entertaining teaching tool, indeed. All of these programs use addition, subtraction and fractions. And the drills use full graphics. It is menu driven and easy for children to use.

Logo 3Pak™ is the second in our series of theme packaged programs. Written in the first computer language dedicated to education, it's friendly, powerful and easy to learn and use. Your children and you can perform simple projects in just the first session with Logo. This 3Pak contains the Logo Tool Kit, sample programs and documentation disks.

# Support for your Apple and you.

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For as little as \$50 annually and no deductible, you can protect your hardware, software and media up to \$15,000. So

don't let uncovered loss spoil your Apple.

Our Attach-Bios software is intended for Apple II Pascal application writers, vendors and

> users. If you need to attach your own drivers or need more detailed information about the Pascal 1.1 Bios, this will

help.
The program is

divided into two sections. The first explains how you may use the attached utility. The second is general information about the Bios. All documentation is found on the disk.

CP/M→SOS Converter is a ready to run program for your Apple III. Now you can convert CP/M® disks to SOS® using your Apple drives. The disk contains the program's source code and character filters. And it doesn't require a softcard to run this program.

# Invite your friends and save. (With twelve you get egg roll)

IAC offers your user group a special package. For \$90 your group receives a full year membership with subscriptions to Apple Orchard magazine, and the Disks of the Month. Included is a listing of other IAC affiliated user groups world wide.

Individually or as a group you can't lose. So don't delay. Fill out the attached membership application on the left.

Start receiving your benefits today.

# The companies we keep.

Here is a list of the corporations that support and sponsor the International Apple Core.

Apple Computer Inc. Cupertino, CA

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Electronic Arts San Mateo, CA

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Sundex Software Corporation Boulder, CA

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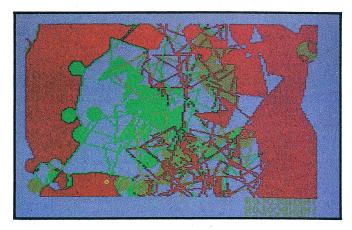


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# CADRE and the Teachers' Institute

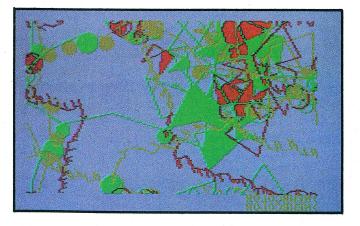


# by Pamela Sharp, Ph.D.

ineteen eighty-four was launched in the Silicon Valley with new transformations of light, sounds and words. Leaders, creative thinkers and computer users from industry, education and the fine and applied design fields met to demonstrate and explore the use of the computer in the arts. A dialogue was initiated on the impact and potential of computer uses for artists, musicians, dancers, writers and designers. The forum was the CADRE Conference and Teacher's Institute.

This article is about the conference and the institute, but mostly about the institute. I am an art educator. I am fascinated by the computer and its potential. For me, the conference served as a fountain of ideas and the institute became the place where those ideas took on practical, pedagogical form. But what is CADRE and what happened at the conference?

CADRE is a humanistic, crossdisciplinary organization with aims toward insuring that technology and the arts continue to develop symbiotically. The acronym, CADRE, stands for Computers in Art and Design, Research and Education. During January of this year, a week of events spanned a wide network of museums, galleries, industrial sites and educational institutions. Exhibits, demonstrations, concerts, lectures, workshops, tours, dance per-





Upper right, lower left:"Conditional Series I". Above: "San Francisco".

formances, gallery openings and a symposium capped almost two years of vision and energy. The week of events was the CADRE Conference.

# The Conference

More than one hundred speakers, panel members and workshop leaders initiated talk that carried over into the social hours of the conference. Abstract ideas were bounced off concrete performances and presentations. Issues surfaced again and again: What is the electronic aesthetic? How is it different? Who is responsible for its qualities? What will be the social consequences of the electronic arts? What does an artist/programmer partnership look like? What languages do we need? What software do we want? What hardware is available?

Big ideas circulating over the network dealt with variations of these questions.

William B. Woodward, of Ohio State, spoke on the unique capability of the computer to mimic the conditions and processes of some forms on behavior. He argued that computers can become partners in the evolution of creative thinking. Steven Wilson of San Francisco State provided information on artificial intelligence, straightened out some of the confusions that exist and argued that the arts and research in artificial intelligence need each other. AI provides artists with models of rigorous and ordered approaches to problems. The artist contributes "spontaneity, creativity and zaniness" to AI, helping to create devices that will be



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AC

# WHAT YOU SEE IS WHAT YOU PLOTTED

# by Nicole Lefcourt

t is a well known fact that complex ideas and numbers are more readily comprehended when the verbal or written words are used in conjunction with some graphic representation.

The Apple Color Plotter, which works as a visual partner with any Apple II or Apple /// allows the Apple user to create colorful pie charts, bar charts, line graphs, X-Y plotting of data and drawings.



Photo courtesy of Apple Computer, Inc.

While it is apparent that the Color Plotter can enhance a professional presentation, it is now being introduced into the school environment to be used in conjunction with LOGO computer language, a product of Logo Computer Systems, Inc.. By manipulating the turtle, a child-friendly screen position indicator, children deal with concepts in areas such as science, mathematics, language arts, and model making. Children are able to address every aspect of their educational lives. Ian Browde, Product Support Manager at Apple Computer, and a strong advocate of LOGO, describes LOGO as "a tool whereby the child learns the concept of process; he/she learns what process is about. LOGO's value lies in the fact that it gives the children space to think; it teaches them to think." He goes on to say, "The child does not just experience right and wrong answers. He/she learns options through the use of experimentation, learns to reflect using lateral thinking and learns to debug. The child becomes equipped with a tool for solving problems. In most programs, the child has an environment put upon him, however, LOGO offers a space to create his own environment using the reality of the language."

In the past, children using LOGO were able to create graphic images on their computer monitors and save them to disk only. They were not able to get a "hard copy" or "printout" of their creative accomplishments. They were not able to share their creations with parents, by taking home a picture or graph.

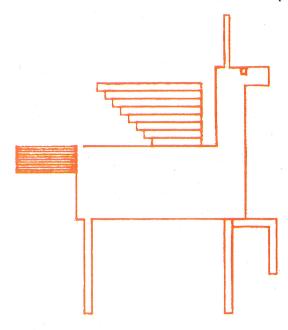
Apple Computer has made available to the public a diskette called **Apple Color Plotter LOGO Interface**. It is a utility program which allows the computer to drive the Color Plotter. The program takes about 75 seconds to load and gives specific instructions which are simple to follow. The diskette is copyable using the CopyA program of the DOS 3.3 System Master. Apple has made the program public domain and is presently available from Apple's Accessory Products Group through the Product Support Department. (Phone: (408) 996-1010).

Although users must purchase the LOGO program, Apple will encourage dealers to make the utility disk readily available for copying.

After outputting a program to the monitor, a child who has use of the Apple Color Plotter LOGO Interface Utility Program may type "PLOT" and the Color Plotter begins to draw color graphics which he/she has programmed with LOGO.

The four-pen plotter, which is capable of producing up to 8 colors on a single drawing, goes to work producing multicolor images on either paper or transparencies for use with an overhead projector. The pen on the plotter becomes the turtle on the screen to produce a picture such as the one below.

Continued on page 82



Sample of a LOGO Plot done on color plotter by second grade class, Corpus Christi Elementary School, Oakland, California.



# Videoterm<sup>™</sup> The Best Selling 80-column Card For Apple®

By the end of 1982, the Videoterm had outsold all other 80-column cards two to one. Today, the Videoterm continues to be the standard for the Apple [ and Apple ][ plus. This is the ideal 80-column card for word processing, spreadsheets, and other business applications.

With the Videoterm, you can display your text with a 7 x 9-dot matrix which provides upper and lower case letters with true descenders. The single-wire shift mod is also supported. The Videoterm will list both Integer and Applesoft BASIC programs using all 80 columns without splitting keywords. The popular ESCape sequence editing capabilities and a stop-list function using Control-S are supported. If you install the Videoterm in Slot #3, it will automatically be used by Pascal and CP/M, since these operating systems recognize the Videoterm as a standard video display terminal.



This kit contains an OPTIONAL Videoterm firmware and a redesigned softswitch for the Apple //e. This OPTIONAL firmware is for a BASIC programmer and includes: NORMAL, INVERSE, HOME, and lower-case entry of BASIC commands.

The Videoterm has no trouble keeping up with 1200 baud modems during normal printing or scrolling. The Videoterm is not compatible with cards plugged into the auxillary slot of the Apple //e. For this situation, we recommend the UltraTerm display card.

# **Videoterm Utilities Disk**

The six programs on the Videoterm Utilities Disk will complement the creativity of the 80-column screen. This disk contains:

GRAPHICS TEMPLATE — Create a business form in 80 columns
SCROLL UTILITY PROGRAM—Set a window in 80 columns
PASCAL DEMONSTRATION PROFONT EDITOR—Create new character fonts
VIDEXGRAPHICS—Provides MID

READ SCREEN—Read characters from screen locations

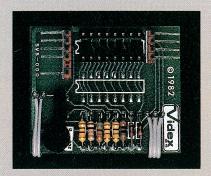
PASCAL DEMONSTRATION PROGRAMS
VIDEXGRAPHICS—Provides MID-RES Graphics in Pascal
MID-RES GRAPHICS—Graphics in 80 columns

# **Alternative Characters**

Spanish
Sini' nr
French
Là r S'éùè

The Videoterm comes with ASCII standard character set. There is a second socket for an alternate character set. You may choose from foreign languages, inverse, underline, APL language, symbol (math and Greek), and line drawing graphic character sets.

# Soft Video Switch



The Soft Video Switch knows whether it should display 40 or 80 columns or Apple graphics. It does the tedious work of video-switching so you don't have to.

# **Switchplate**

Some programs (especially those that use Run-Time Pascal) write directly to the 40-column text page and do not use standard video-switching protocol. For these programs, the Switchplate allows you to easily toggle to the 40-column video output.



# **Videx**

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Userfest features all the major makes of Apple and IBM computer compatibles. In fact, it's the largest display of these products, and biggest gathering of IBM and Apple experts, ever assembled in either city. Hence, you can learn more in two days at Userfest than you could in months of visiting computer stores or reading trade journals.

And best of all, everything on display at show prices, so you can save hundreds, even thousands of dollars by making your purchases at the Show.

So don't miss the Personal Computer Userfest when it comes to Chicago and New York in 1984. It's a once-only opportunity.

Order your tickets in advance and avoid long lines. Admission is \$10.00 for a oneday ticket, or \$20.00 for four days. Children's tickets (under 10 years of age) are \$4.00 and \$8.00. If you need hotel accommodations and/or airline reservations, check the line on the Advance Ticket form.

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# OPEN YOUR APPLE TO A WORLD OF COMMUNICATION

Videx' new PSIO Dual Function Interface Card gives you a whole new world of communication... with a whole new ease of operation.

The PSIO allows you to use a printer (parallel output) and a modem (serial I/O port) simultaneously, through use of just one card! But best of all, the PSIO makes communicating through either method worlds easier than it's ever been before.

The PSIO lets you choose from among an unmatched range of software-selectable options, including variable baud rate selection, form width, form length, auto linefeed, linefeed mask, Xon/Xoff protocol, lowercase masking, shift wire mod support, duplex mode, parity, data format, video echo mode and a slot echo mode.

**PSIO** can also open up new worlds for graphics, since it can reproduce your picture on any graphics printer. Rotate your picture, enlarge it, change it as you wish.

options, the PSIO's highly sophisticated NOVRAM (non-volatile RAM) will remember and permanently save them. That means you won't have to give the same configurations over and over again ... your PSIO will do it for you. And if you want to change those configurations, you can do it through software instead of through the confusing array of switches that

Once you've chosen your

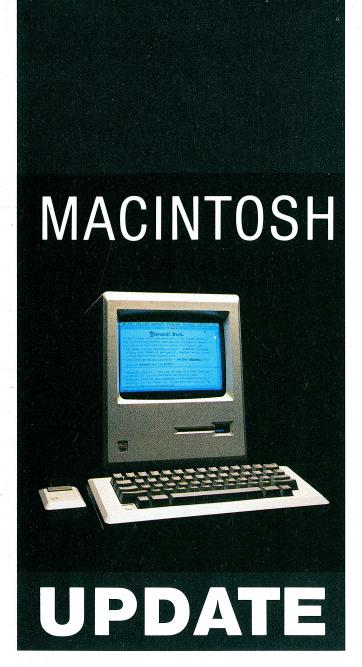
The PSIO will work with any printer/modem you now happen to own...and it will work with any printer/modem you happen to purchase in the future. Adaptable? Definitely!

other cards use.

The PSIO is completely compatible with BASIC, Pascal and CP/M® systems.

The PSIO from Videx...how in the world can you do without it?!



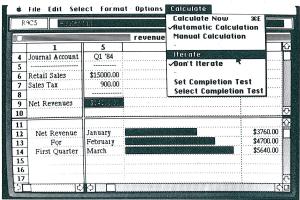


by Gene Wilson

he Apple Orchard has contacted many of the "80" companies that Apple Computer acknowledges are working on Macintosh software and hardware products. We've compiled a partial list of products that about onethird of those "seeded" companies have ready for market (or will have ready soon). Apple experts speculate that by the end of 1984 there will be over 500 programs running on the Macintosh computer (and Lisas as well).

# Five Products Announced From MICROSOFT More software is being developed

Multiplan provides all the "spreadsheet" features from other versions of Multiplan. This version, however, also includes such "Macintosh" standard features as the "UNDO" command for reversal of the last change to the spreadsheet, and expanded print options, such as headers, footers and automatic page numbering. Also standard are "pull-down" menus, full use of the mouse, and cut-and-paste of data between spreadsheets. Available now. \$195.00.



Word shows text and graphics on screen, including proportional spacing and support for all Macintosh fonts. Word makes full use of Macintosh's menus and dialogue managers; the standard Macintosh edit features of CUT, COPY, and PASTE are fully supported. Information can be merged from other documents, or Microsoft File, into form letters. Available in second quarter, 1984. \$195.00.

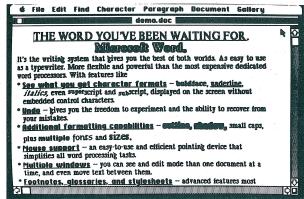


Chart enables graphics data to be entered, edited and formatted directly in windows on the screen. Data can be entered from Multiplan or File, or any other Macintosh program. Chart has an extensive pictorial "gallery" of over 40 available charts and graph formats. Users may customize their chart by using the mouse to select formats or options, or move objects on the chart to other positions. The user selects fonts and type sizes and may position text such as headings, axes, titles, etc. anywhere on the chart. Available now. \$125.00.

# Finally, a 6502 Assembler that doesn't require a genius to operate.



# LISA v2.6

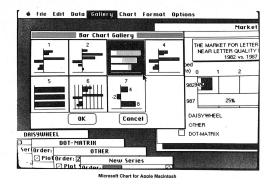
You don't need an I.Q. of 200 to learn assembly language on your Apple II or AppleIIe. All you need is the best 6502 assembler around: **Lazer's Interactive Symbolic Assembler (LISA v2.6)**. LISA is the easy-tolearn and easy-to-use system that will have even the absolute beginner up and running in a matter of minutes. In addition to LISA's clearly written 240-page manual more tutorial material is available for LISA than any other assembler (including books by D. Fudge, R. Hyde, W. Mauer, and R. Mottola). LISA is true beginner's best

Even if your I.Q. is 200, you'll appreciate LISA's speed, power, and ease of use. At 20,000 lines/minute it's 20 to 30 times faster than ORCA/M or Apple's own Toolkit assembler. That's why people like Bill Budge, Ken Williams, Brian Fitzgerald, Don Fudge, and Steve Wozniak use it every day. LISA is very usable. That's why it's the most often used assembler ever created for the Apple II.

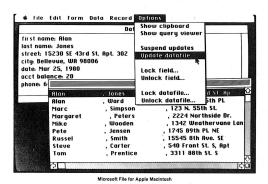
LISA v2.6 is available for \$79.95 at computer stores everywhere. If your local computer store doesn't have a copy you can order directly from:

Lazerware, 925 Lorna St., Corona, California 91720. (714) 735-1041

Circle HelpCard No. 25



File stores and retrieves information, and it offers forms-based data entry and retrieval. File forms can be completely specified by the user. File can be used to supply information to an application that can read and write text files, form letter information for Word's Mail Merge capability or Macintosh's Clipboard. Available in second quarter, 1984. \$195.00.

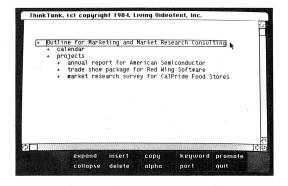


Microsoft BASIC's source code is fully compatible with all standard versions of Microsoft BASIC. The Macintosh version also has a decimal math pack with 14digit precision, string variables, and string expressions of up to 32,767 characters each. Three kinds of windows are included; one for command entry when in direct mode or edit; one for viewing the program listing, and the third for the output of a running program.

Microsoft's GW BASIC includes complete access to Macintosh's bit-map. This version has standard syntax for mouse support, allowing applications to be written in BASIC that are visually oriented and mouse driven. There is also support for Macintosh's Font Manager and call access to Quickdraw routines. Available now. \$150.00.

Habadex, a specialized data base manager/phonebook, by Haba Systems, Inc., simplifies telephone record keeping and dialing. Also included is an electronic appointment calendar with month-at-a-glance and day-at-a-glance features as well as a tone reminder of appointments. The program will allow the user to insert up to sixteen hundred names, addresses, phone numbers and other information / into his or her telephone directory, rearrange that directory, find any name then dial the number at the touch of the mouse. The Zoom feature gives complete information about one name at a time. Direct, OCC, and Redial features are included, which allows the system to automatically insert additional numbers, like an MCI number, on long distance calls. By storing a MacWrite form letter in the Macintosh Clipboard, the "yellow pages" feature becomes a Mail Manager, which creates personalized form letters for entire categories in the phone book. While other programs are being used, there is an Icon (a telephone symbol), which resides in the same pull-down menu with Apple accessories, which becomes a "window dialer" when "clicked." Available now, for \$195.00.

ThinkTank, a software tool for brainstorming, by Living Videotext, Inc., works within a single window on the Macintosh screen, making it possible to display a ThinkTank outline simultaneously with a spreadsheet, a word processor, or a database application. An outline of an article or report can be prepared and then loaded into a word processing program for formatting. The headline cursor moves as the mouse is moved; the screen scrolls automatically, or by pointing at a "scroll bar" and "mousing down." Clicking on a headline causes it to "expand," revealing the subheadings underneath. When the mouse is moved to a row of "command buttons" at the bottom of the window, ThinkTank performs a variety of functions such as Insert (add a new heading), Delete (delete a heading), Search or Copy. Other versions are available for the Apple //e and Apple /// computers. Available second quarter, 1984, on Macintosh. Under \$200.



**BPI Announces Four Business Accounting Packages** 

BPI's General Accounting, Accounts Receivable, Accounts Payable and Payroll packages will be available for the Macintosh computer, in Spring, 1984. All four packages use the Macintosh mouse for menu and item selection, and are customized to take advantage of the computer's unique visual characteristics and microprocessor speed. Also under development, are three packages from BPI's Personal Series: Personal Accounting, Personal Investing and Speed Reading.

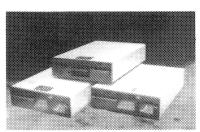
Personal Tax Planner, by Aardvark/McGraw-Hill, is a Federal income tax planning program for renters or homeowners, one or two-earner households, IRA or Keough participants, figuring short or long-term capital gain/losses, purchase or sale of real estate or other big-ticket items, second jobs, and business expenses. It allows examination of up to five alternatives for a single year or projections of up to five successive years. Income averaging and alternative minimum tax calculations are performed automatically. The program runs inside Macintosh windows, and makes use of the Icon, Graphics, and Mouse features. Available in early 1984. \$99.00.

Continued on page 64.

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- All new 1984 design incorporates the latest in state-of-art I.C. technologies.
- Complete 12 bit A/D converter, with an accuracy of 0.02%!
- 16 single ended channels (single ended means that your signals are measured against the Apple's GND.) or 8 differential channels. Most all the signals you will measure are single
- 9 software programmable full scale anges, any of the 16 channels can have any range any time. Under program control, you can select any of the following ranges: ±10 volts, ±5V, ±2.5V, ±1.0V, ±500MV, ±250MV, ±100MV, ±50MV, or ±25MV.
- Very fast conversion (25 micro seconds).
- Analog input resistance greater than 1,000,000 ohms.
- Laser-trimmed scaling resistors.
- Low power consumption through the use of CMOS devices.
- The user connector has +12 and -12 volts on it so you can power your
- Only elementary programming is required to use the A/D.
- The entire system is on one standard size plug in card that fits neatly inside the Apple.
- System includes sample programs on **PRICE \$319**

# 8 BIT, 8 CHANNEL A/D

- 8 Channels
- 8 Bit Resolution
- On Board Memory
- Fast Conversion (.078 ms per channel)
- A/D Process Totally Transparent to Apple (looks like memory)

The APPLIED ENGINEERING A/D BOARD is an 8 bit, 8 channel, memory buffered, data acquisition system. It consists of an 8 bit A/D converter, an 8 channel multiplexer and 8 x 8 random access memory.

The analog to digital conversion takes place on a continuous, channel sequencing basis. Data is automatically transferred to on board memory at the end of each conversion. No A/D converter could be easier to use.

Our A/D board comes standard with 0, 10V full scale inputs. These inputs can be changed by the user to 0, -10V, or -5V, +5V or other ranges as needed.

The user connector has +12 and -12 volts on it so you can power your

- Accuracy; 0.3%
- Input Resistance: 20K Ohms Typ

**PRICE \$129.00** 

A few applications may include the monitoring of  $\bullet$  flow  $\bullet$  temperature  $\bullet$  humidity  $\bullet$  wind speed  $\bullet$  wind direction  $\bullet$  light intensity  $\bullet$  pressure  $\bullet$  RPM  $\bullet$  soil moisture and many more.

### **SIGNAL CONDITIONER**

Our 8 channel signal conditioner is designed for use with both our A/D converters. This board incorporates 8 F.E.T. op-amps, which allow almost any gain or offset. For example: an input signal that varies from 2.00 to 2.15 volts or a signal that varies from 0 to 50 mV can easily be converted to 0-10V output for the A/D.

The signal conditioner's outputs are a high quality 16 pin gold I.C. socket that matches the one on the A/D's so a simple ribbon cable connects the two. The signal conditioner can be powered by your Apple or from an external supply.

### **FEATURES**

- 4.5" square for standard card cage and 4 mounting holes for standard mounting. The signal conditioner does not plug into the Apple, it can be located up to ½ mile away from
- 22 pin .156 spacing edge card input connector (extra connectors are easily available i.e. Radio Shack).
- Large bread board area
- Full detailed schematic included.

**PRICE \$79.00** 

**59**95

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# DIGITAL INPUT/OUTPUT BOARD

- Provides 8 buffered outputs to a standard 16 pin socket for standard dip ribbon cable connection.
- Power-up reset assures that all outputs are off when your Apple is turned on.
- Features 8 inputs that can be driven from TTL logic or any 5 volt source.
- Your inputs can be anything from high speed logic to simple switches.
- Very simple to program, just PEEK at the data.
- Now, on one card, you can have 8 digital outputs and 8 digital inputs each with its own connector. The super input/output board is your best choice for any control

The SUPER INPUT/OUTPUT board manual includes many programs for inputs and outputs. A detailed schematic is included.

Some applications include:

Burglar alarm, direction sensing, use with relays to turn on lights, sound buzzers, start motors, control tape recorders and printers, use with digital joystick. PRICE \$69.00

Please see our other full page ad in this magazine for information on Applied Engineering's Timemaster Clock Card and other products for the Apple.

Our boards are far superior to most of the consumer electronics made today. All I.C.'s are in high quality sockets with mil-spec, components used throughout. P.C. boards are glass-epoxy with gold contacts. Made in America to be the best in the world. All products compatible with Apple II and //e. Applied Engineering's products are fully tested with complete documentation and available for immediate delivery. All products are guaranteed with a no hassle three year warranty.

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CRTplus, by Aurora Systems, Inc., is a decision support tool designed to help the financial service industry cope with the new competitive environment caused by deregulation. CRTplus uses the microcomputer to help banks, S&Ls, other thrifts, credit unions and other financial service companies develop new customers. CRTplus performs a variety of financial calculations including CD and early withdrawal analysis, IRA account analysis, installment loan alternatives, loan amortization, and taxable vs. nontaxable investment strategies. It also gives customers personalized printouts with information regarding various calculations and services. Available in second quarter, 1984.

Magic Phone, by Artsci, Inc., will operate along with any hardware modem. The phone attaches on the side of the computer to provide a communication center using the computer. A "hold" button feature, along with speaker output creates a computerized phone system. Artsci's data base program, Magic File, is provided to allow the user a data base along with the automatic phone number dialing. Multiple phone lines are supported.

Personal Accounting Plus, by ASK Micro, Inc., gives personal computer users a complete system for organizing personal finances. It maintains records on checking and savings accounts, credit cards, and other personal assets. The system will also provide extensive reports including net worth statements, balance sheets, and budget analysis information. Available second quarter, 1984.

Roger Wagner Publishing, Inc., (formerly Southwestern Data Systems), is working on program development aids, Macintosh versions of existing products, and new products in the home and institutional education areas. The first of these are expected to be available in Summer, 1984.

Telos, a major scientific and business software developer, will introduce a new family of Macintosh software designed to increase the productivity of users involved in analytical, problem-solving, and creative tasks. The first product, due in April of 1984, will allow users to manipulate complex images and information in an entirely new way for a broad range of personal and business applications.

# AgDISK™ Software For Agriculture

AgDISKHarris Technical Systems will be providing twelve new programs for the Macintosh computer. With Macintosh windowing and graphics, AgDISK decision aid products can show input in one area, another area with the corresponding output, and, most important, a third window with high resolution graphics displaying what the results actually mean to the farmer. All are shown at the same time. The AgDISK products include:

•	Financial Management Series One	\$170.
•	Crop/Livestock Profit Projector	\$120.
•	Machinery Management Series One	\$170.
•	Corn/Soybean Management Series One	\$170.
•	Swine Management Series One	\$170.
•	Business Management Multiplan Templates	\$95.
•	Cow-Calf Herd Management Multiplan Templates	\$95.

- Crop Management Multiplan Templates
  - Feedlot Cattle Management Multiplan Templates \$95.

\$95.

- Machinery Management Multiplan Templates \$95.
- Swine Farrowing Management Multiplan Templates \$95.
- Swine Finishing Management Multiplan Templates \$95.

Eleven additional **AgDISK** products will be announced when a second disk drive unit becomes available.

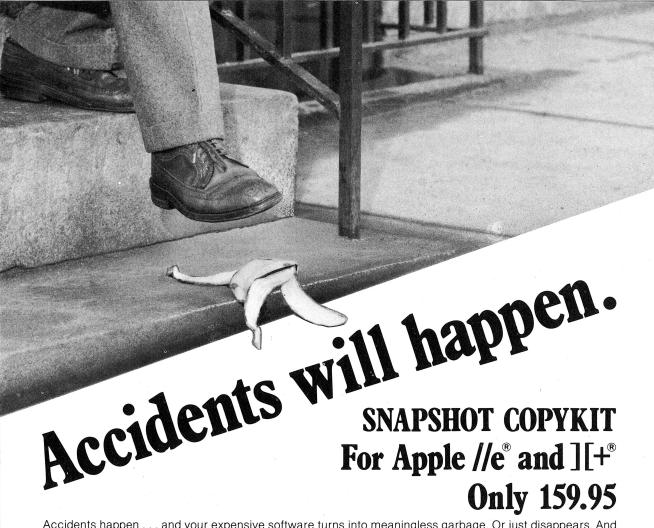
Mac-FORTH(tm), by Creative Solutions, Inc., is specifically designed for developers and end users. Macintosh software development in FORTH does not need a Lisa system! It integrates the interactive nature, speed, and flexibility typical of FORTH systems with the graphics windows, menus, mouse selection, and file structure of the Macintosh user interface. The result is an extremely powerful and exciting tool for application problem solving. Available now, for \$149.95.

Fast Track(tm), by Creative Solutions, Inc., is a FORTH engine for a series of application packages that require interactive tracking of dollars, units, hours or materials over user specified periods. Fast Track makes extensive use of the Macintosh user interface, incorporating graphics and editing features. The packages are:

- The Time Manager is a professional time billing system with multiple sorting levels and categories (by client, job, date, work order for expenses/hours). Under \$100.00.
- The Office Planner utilizes Macintosh Quickdraw features to depict furniture size/shape and arrangement for better utilization of this limited resource. Scaling and rotation of objects is included. Under \$100.00.
- Material Manager is a material inventory system that maintains units and dollars by categories and other user specified sorting parameters. Fixed assets as well as non-durable goods can be separately tracked and reported with this system. Bar code is supported with a remote MSI 88 terminal. Under \$100.00.

Mac Disk, by Davong Systems, Inc., will be part of a complete family of peripheral products for the Macintosh computer. Hard disk systems ranging from 5 to 40 megabytes (formatted) will plug into Mac's RS422 Serial Port. Prices will start at \$1,995, for the 5 Mbyte unit, \$2,395 for the 10 Mbyte unit, and \$4,495 for a full 40 Mbytes of hard disk storage. In third quarter, 1984 a multi-tasking, "central server" will be brought on-line. Multiple Macs will share the resources of the server, one external device can be attached, and two internal devices, such as large hard disks or printers can be available (to the entire network). A 28 megabyte streaming tape backup system will also join the lineup in third quarter, 1984.

NPL, the "NonProgrammer's Language" for developing complete data management applications, is being adapted to the Macintosh environment by DeskTop Software Corporation. In this new version, sentences will be built by using the mouse to select keywords from dynamically adjusted pull-down menus. Users can "paint" a form in a window for entering and editing of data. Automatic validation is also available for testing values, ranges, and data types. All standard Macintosh editing capability (such as cutting and pasting) will be available for use in both forms and programs. Summer, 1984.



Accidents happen . . . and your expensive software turns into meaningless garbage. Or just disappears. And that's a disaster unless you have the SNAPSHOT Copykit (for Apple\*). A SNAPSHOT backup is your best "disaster" insurance.

**MOST POWERFUL.** The Snapshot system leaves the competition in the dust, giving you back the power over your computer that copy protection took away. You can duplicate every byte of your memory-resident programs up to 128K. You can interrupt a running program, copy it, list it, disassemble it, step and trace, modify it and resume running. The program never knows what happened.

**USER FRIENDLY.** One simple menu. **NO** parameters. **NO** disk swapping. **NO** booting and re-booting "utility" disks or finding your way through a maze of menus. Back up your single-load programs with one menu and a push of the button—in seconds. Dark Star Systems is a user-friendly company, too. Our knowledgeable, helpful people are happy to answer your questions.

**VERSATILE.** All backups are automatically BRUNnable files which can be moved to hard disk. State-of-theart compression lets you stack several backups on one diskette. SNAPSHOT software is in RAM, so it can be updated to keep you ahead of the protection game. Your Snapshot system can never become obsolete.

AND MORE! Call or write for our info packet.

**SNAPSHOT COPYKIT:** \$159.95

System requirements: Apple II, II+, IIe, Basis 108, Franklin or other lookalike with disk drive.

**SNAPSHOT TWO:** \$75.00 (through dealers only)

System requirements: Apple II or II +, Franklin 1000 with disk drive. RAMcard required in Apple; specify brand when ordering.

**TO ORDER:** Add \$3.00 for shipping in US (\$7.50 to Canada, \$15.00 elsewhere). US funds only, please. Send check payable to Dark Star Systems. Mass residents add 5% tax. VISA and American Express accepted. DEALER INQUIRIES INVITED.



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# Snapshot Copykit... the one copy card that does it all... for less.

- \*For use in Apple IIe, II + , and II
- \*Apple`is a registered TM of Apple Computer Inc.

# **Human Edge Software Announces Three Business Strategy Programs**

These interactive programs provide customized business advice/strategies for individual situations, after asking for information about the user and his/her situation. The programs are:

- The Sales Edge offers the user information on how he can best present, conduct and close a sale. Available second quarter, 1984.
- The Management Edge gives the user advice on how to increase productivity and motivation, resolve conflicts and effectively discipline or reward an employee. Available later in 1984.
- The Negotiation Edge helps the user develop strategies for conducting negotiations in situations from buying a car, to reaching a union agreement. Available later in 1984.

# Infocom Announces Full Line Of **Recreational Software**

Known as interactive fiction or participatory novels, Infocom's top selling software packages in fantasy, science fiction, murder mystery, and adventure will be available soon in Macintosh versions. Programs will include, the ZORK Trilogy, Enchanter, Sorcerer, Planetfall, Suspended, Starcross, Witness, Deadline, and Infidel.

MegaFinder, by Megahaus Corporation, is a data management program with report and form design capabilities. It uses Macintosh's "pull-down" menus to enter commands, icons to represent reports and forms stored on disk, and the mouse for command selection. Several readymade forms and reports are included to get the novice started.

Persyst (Personal Systems Technology, Inc.) will market two communications software products for the Macintosh computer. MAC/3270(tm) and MAC/3770(tm) programs support interactive or remote job entry facilities allowing users to access mainframe data bases. Documentation includes screen display illustrations, charts, and complete feature descriptions. Both products will be available during second quarter, 1984.

# Scarborough Systems, Inc. Offers **Business Games**

Run For The Money, a new arcade-action business game, can be played by two players. It challenges the players' business skills and strategy as they try to be first to leave the strange planet Simian, where they have been forced to land their space ship. Available in Fall, 1984. Other products being converted to the Macintosh format include MasterType, Songwriter, PictureWriter, Phi Beta Filer, and PatternMaker.

Typing Tutor III, published by Simon and Schuster, is an advanced touch typing instruction program. The program's "time response monitoring" (tm) feature makes use of the Macintosh's high speed processor to monitor student response time and error rate. Menu choices will be indicated with icons (mouse or keyboard selectable). A high resolution image of the keyboard appears on the screen, along with explanatory prompts, full on-demand help documentation, and progress test results, which are displayed as bar charts showing speed and accuracy improvements for each key. Available in May. 1984, for \$49.95.

Other software packages will be released during 1984. One of these, Letter Invaders, will be a fast action arcade style game, to further develop typing abilities.

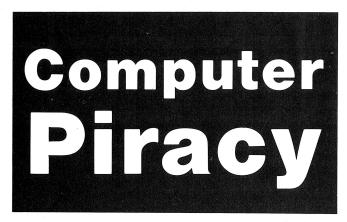
Wizardry, by Sir-Tech Software, Inc., is being completely rewritten to take full advantage of the power and sophistication of the new Macintosh computer. The "new" fantasy game will be available in April, 1984.

PFS (Software Publishing Corporation) is developing special versions of PFS:FILE and PFS:REPORT. These programs will take advantage of Macintosh's advanced features. Dialogue and alert boxes will be added to the screen, when appropriate, to aid the user in entering data, as well as to display easy to understand error messages. Available second quarter, 1984. Each program will retail for about \$100.

DataTalker II, by Winterhalter Inc., plugs into the Macintosh's serial port, and, using a choice of included software, allows the Macintosh to emulate several IBM terminal systems. The emulation software is delivered on two diskettes. The software is downloaded from the Macintosh into the DataTalker II. This arrangement relieves the Macintosh of all communications overhead and overload. Current terminals being emulated include the IBM 3271, 3275, and 3276 interactive terminals, and the IBM 3780, 2780, 3741, 2968, and 2770 remote batch terminals. The protocol is full bisynchronous which can be user-modified. \$995.00.

# Tecmar, Inc. Offers A New Product Line Tecmar offers the following products for the Macintosh computer and other Applebus peripherals:

- A 300/1200 baud (212 A compatible) modem with touch-tone decoding, pulse/tone automatic dialer and full voice interface. It includes an independent power supply and self contained enclosure. This system can be used to enter data or commands remotely through the standard keypad of a telephone.
- A Peripheral Expansion unit provides four additional serial RS 232 ports. An independent power supply with enclosure is provided. The unit plugs directly into the Applebus interface.
- The **Telephone/Modem Interface** can be used as a standard telephone with a handset or be connected to a telephone.
- A Syquest, Cartridge Winchester hard disk drive, which features a 5 MByte Removable Cartridge Winchester Subsystem. A power supply and enclosure are included.
- An "in-line" printer buffer is available in 64 KByte increments up to 512 KBytes. Includes an independent power supply and enclosure.
- An IEEE488 Interface is available for laboratory, test and measurement, process control and other applications where the IEEE488 interface is being used. It plugs into the Applebus interface.



by I. M. Anonymous

n the fledgling years of personal computers terms like "software pirate" and "system cracker" were barely known. Today these terms have an almost universal meaning, far beyond the dreams (or nightmares) of those working in the computer industry of the 70's.

# **Copy protection** schemes and unreasonable prices created the first pirates.

Back in those unenlightened days most software houses released their products on unprotected diskettes. The sales lost to pirated copies of a product were minimal because the average consumer was still having difficulty cataloging diskettes. Utility programs such as "COPYA" were still dark mysteries to many personal computer users.

As the infant industry leapt into its childhood the often unreasonable prices of software products made the practice of piracy both practical and cost effective. Mass duplication of certain unique business programs, which retailed for hundreds of dollars, saved many businessmen thousands of dollars. Despite the fact that such duplication was illegal, no one seemed to care much at the time. Only a few right wing conservatives even tried.

The capitalistic software houses were not a bit happy with the development of this attitude. They saw the water empire which they had constructed beginning to crumble. The software market took a huge step into the field of software protection. Most expensive business programs were sold on "uncopyable" diskettes. Many businessmen, whose knowledge of piracy halted with "COPYA", were forced to bow under to the oppressive software oligarchy.

Many programmers, however, resented the very idea of "protected" software. A program which couldn't be modified or expanded which you actually had to PAY for was an unheard-of rip-off. Programmers often took it upon themselves to "unprotect" these programs, thus undoing the terrible injustice which the omnipotent software houses were trying to inflict on the helpless public.

The software houses, still refusing to accept a reduction in profit, continued to develop more difficult protection schemes. They could afford to spend thousands of dollars in an attempt to steady the base of their empire. Software protection spread throughout the market; from business programs to computer games.

This was a fatal step for the software companies. The protection of computer games directly affected many young computer experts. Most of these young people could not afford to waste twenty or thirty dollars a month on a single game. Instead of bending to the will of the software magnates, as many businessmen had done before them, many young experts banded together to copy or "crack" the protected software rather than pay for a "legal" copy.

Quite a few of these young adults had lived their lives as social outcasts. They were the "brains" and "nerds" who were cast out by their fellow peers. In computer technology many of them had found a peer group in which they could be accepted. The social reward of copying or cracking a software product was often worth much more than the actual intellectual accomplishment of solving the "protection" puzzle. Piracy provided a social medium in which the ostracized children of a non-intellectual society could prosper.

# Pirates "nibbled" away protection schemes.

The introduction of powerful "nibble" copiers to the personal computer market gave every young computer wizard the tools necessary for software piracy. Quite naturally these young computer programmers joined together in clubs or loose groups throughout the country. Many of these clubs met specifically for the purpose of trading pirated software and learning new piracy techniques. It was an idea whose time had come. Software piracy leapt across the country literally overnight. Many saw it as a modern day crusade: the righteous computer generation against the oppressive software houses.

It is amusing to hear many adults lecture on the evils of software piracy. Many cannot understand what has happened to the morality of the new generation. They condemn their own offspring for "stealing" computer programs. Apparently they have conveniently chosen to forget all of the music cassettes which they illegally duplicated during their own lives. Although the "crimes" are equivalent, most adults refuse to acknowledge this double standard. The tradition of "Do what I way, not what I do" continues into the computer generation.

# **Bulletin Board** Systems became "underground" education centers.

With the aid of an inexpensive telecommunications device and a standard telephone line a computer pirate can gain access to thousands of other computers across the nation. Many local computerized Bulletin Board Systems (BBSes) enable computer operators to read messages describing methods of copying software and unprotecting programs. Many BBSes also list special unlisted telephone numbers of private computer systems and techniques for breaking into these machines.

The phone company often puts a stop to any mischievous experimentation which they might want to attempt. Almost any long distance phone call made to a BBS returns a devastating bill from Ma Bell. Many underaged pirates are forced to abort modem usage when their parents discover the cost of their hobby.

More imaginative wizards find a variety of ways around long distance phone bills. One of the most popular techniques involved the use of a hardware device known as a "blue box." Blue boxes send a special signal to the phone company's computer which makes it think that the calling party has hung up. This causes billing to cease and enables the caller to make any phone call free of charge. The phone company has recently installed "blue box detectors" in many of its switching offices which enable them to track down "blue box" pirates with annoying accuracy.

Another technique used by computer bandits to avoid long distance phone bills is to take advantage of the new "alternate" long distance services. Companies like MCI have dial-in numbers in most large cities in the United States. Given several hours most computer bandits can easily crack several "access" codes used by their local MCI branch.

Those unfortunate victims who receive the MCI phone bills for hours of computer connections seldom end up paying. One man once received a monthly bill for over \$10,000 which contained calls made within minutes of one another from opposite coasts of the United States. In such cases Ma Bell or MCI are forced to swallow the outrageous telephone bills as they do with the millions of other cases of phone fraud each year.

BBSes offer a medium in which sensitive information can be released anonymously. "Radical" information found on these systems often cannot be found anywhere else. Telephone numbers of government computers and officials along with access codes to many computer systems can sometimes be discovered on the more wild BBSes.

Certain government offices frown on these types of BBSes and enjoy violating the first amendment by sending the FBI to periodically remove them from public use. This blatant violation of the first amendment makes many computer bandits a bit resentful. Rather than hindering the spread of interesting information, the government often provokes its distribution.

The removal of an exceptionally interesting BBS which catered in the private telephone numbers of high government officials resulted in a surge of phone calls made to many leading government officials between the hours of 2 and 3 a.m. Efforts of several government agencies to change these numbers were countered by computer pirates within the phone company.

The information revealed on radical BBSes can enable computer bandits to gain access to large government computers. Once on these machines it is possible to examine the files of many other "valid" users. These files often contain personal information and proprietary software. It gives the computer pirate a God-like feeling of power to look through the belongings of other people. This feeling of power is amplified as the bandit gains access to each new computer system.

# **Networks, designed** for ease of use, also made the pirate's access easier.

Many large main frame computers are linked together by high speed data communications networks. These networks are used non-interactively to transfer mail and files between two or more machines. Many networks can also be used interactively to enable a single user to communicate directly with a remote computer.

One of the largest and most popular networks was developed by the Department of Defense. The Advanced Research Projects Association Network, often referred to as the ARPA net, links together hundreds of computers from across the United States. The ARPA net is used by government and pirates alike to enhance communications between large computer systems often thousands of miles apart.

The ARPA net was used back in September, 1983, by several UCLA students to infiltrate over a dozen computers across the country. Before they were apprehended by government officials these ingenious bandits had managed to break into computers in Arizona, Berkeley, Cornell, Purdue, and Wisconsin. The government claims that these pranksters caused damages reaching hundreds thousands of dollars. In reality these computer pirates didn't cause any damage to the systems they infiltrated. Like the majority of computer pirates they were only browsing through the machines that they could break into. The "damage" figure revealed by the government actually refers to the cost of tracking down these harmless pranksters and sealing the security holes through which they entered the machines.

The ARPA net was also used by the now famous 414ers to infiltrate several important computer sites across the country. The 414ers were eventually apprehended after they gained access to a medical computer and "endangered" the lives of patients by altering medical records. Rumor has it that they only altered the outrageous medical bills being charged to several patients. Most computer bandits are not not hoping to wreak havor on the world. From time to time they indulge their God-like powers by saving other people money, but few would ever intentionally cause wanton death or destruction.

The few misguided computer wizards who do enjoy violating other people's systems and destroying or altering valuable records are the anti-socials of the computer generation. Rejected by both the "normal world" and the world of their fellow computer peers, members of this sad minority spend hours breaking into computers with the intent of crashing the system.

One such outcast broke into a large business computer several years ago and inserted a "time bomb" into the operating system. A few months after his undetected infiltration the bomb "exploded" and exterminated every piece of data which was mounted on the machine at the time. The cost of recovering the data lost reached almost half a million dollars.

Another dangerous system crasher created an "intelligent" program which would create copies of itself throughout a machine. After a specified data the program would become active, randomly deleting files from the operating system. If this "time bomb" was removed from the system one of its offspring would automatically become active, thus countering any move to eliminate the crasher's program. The real danger of this type of program is that it may go undetected, even during its destructive period, because it only removes randomly selected files from the operating system. Because many systems do occasionally lose files it may take a system administrator several months to suspect that a "smart bomb" has been installed in his machine.

#### The Federal government, frightened by "holes" in security, is "lashing out" against unauthorized use of computers.

The really frightening thing about computer piracy on the network level is how easily it can be accomplished. If a young adult can penetrate a sophisticated government computer network with a personal computer and a modem what could a foreign government accomplish? It is not the computer bandits which represent a threat to the government but the weakness which they have revealed to the world.

The government is frightened by this weakness. They have recently passed several laws which make computer infiltration a federal offense. The computer bandits who use government computer networks will not be oppressed by the threat of government intervention. Instead of punishing these computer wizards, the government should be thanking them for providing a continual check on the security of our national computer systems.

It is unfortunate that the news media enjoys spotlighting this radical minority of the computer generation. Most computer bandits would never intentionally alter or destroy data. On the whole their purpose is to penetrate and examine the data stored on as many systems as possible in order to increase their own general knowledge. Whether the world likes it or not computer piracy is here to stay. The industry is going to have to accept it or suffer the consequences.

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- supports lower case, the shift-key modification, and enhancer (under the keyboard) boards.
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- 9 Block Commands-including delete, move, and copy a marked block; save and append a mark block to a file; and load a file at the current cursor position.
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#### Viewport

AT&T Technologies (which we used to know and love as Western Electric), is rumored to be working on a home-size computer. Such a machine would likely make use of the 256K RAM memory chip and other goodies from the Birthplace of the Transistor. Well, AT&T is the company probably best-equipped to take on IBM, in true "Battle of the Giants" fashion.

Recent skirmish in that battle: Videotex, the two-way interactive data transmission process for home video screens, has a new player: a joint venture of Sears, IBM, and CBS. They'll compete with AT&T. In a New Jersey demo, AT&T and CBS tested a system, but the AT&T setup requires that the homeowner use its dedicated terminal; personal computers not welcome. The new joint venture will presumably allow PCs to be used, and it's likely that AT&T will be forced to follow suit. Your Apple will most likely work with either system, if as and when they get started.

More on videotext: Time, Inc. has ceased testing a teletext service in Orlando, FL and San Diego, CA. Technology used was said to be unreliable. They didn't use Apples either.

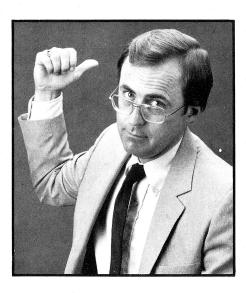
Divorce time: Software Arts and VisiCorp are in court over rights to VisiCalc. Software Arts intends to market the spreadsheet program itself, and VisiCorp was denied a preliminary injunction against SA using the "Visi" trademarks. One interesting note is the extent to which VisiCorp was or wasn't successful with other products: according to VisiCorp, of one million products sold, 700,000 were VisiCalc. (Did that include the beloved \$30 backup disks?)

Louisiana's legislature is looking into a bill to make unauthorized duplication of software a crime under state law. Openly stated purpose by Bayou State officials is to attract more Hi-Tech companies to Louisiana by providing a more protective climate, where the fine print in the software licenses would actually mean something. What's the penalty for Possession of Locksmith?

We hear that about 900 new computer-related books were published last year, with even more to come this year. It's not only printer paper sales that give rise to the maxim, "Buy a computer and kill a tree."

Whither the market? Disc/Trend Report forecasts 3 million floppy disk drives sold per year by 1986. In 1983 it was less than a million. The 3.5-inch format will gain, whether it's blue (Sony) or beige (Apple).

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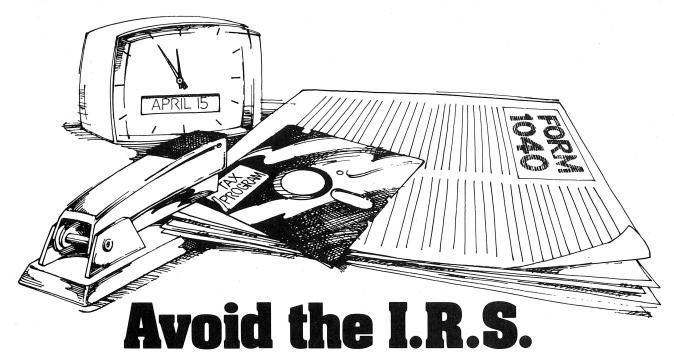
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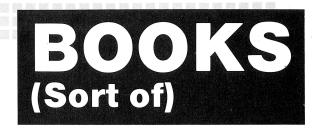
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The weight of this sad time we must obey: Speak what we feel, not what we ought to say.

-King Lear

This is supposed to be a book review column. A book review column is supposed to, among other things, review books. You know--comment on style, accuracy, usefulness, that sort of thing. This being a magazine about Apple computers, it would be nice if I wrote about books that concerned themselves with Apple II, ///, Macintosh and/or Lisa machines. And this being a publication that likes to consider itself upto-date, hip, On The Cutting Edge and so on, it would be seemly and appropriate for me to write about recently published works.

#### It ain't easy.

You have to understand that I love reviewing books. Words are my life. I read incessantly. I write books and manuals for a living. In my spare time I teach other people how to write.

Actually, I teach people how to write **better**. Either you can write or you can't. That's where the problem comes in. Most of the books I've seen lately are written by people who can't write. Or they're writing about silly things. Or the information they're presenting is inaccurate. Or stupid. Or boring.

It used to be easy. You'd go into a bookstore, find out where the computer books were kept ("I think they're in Math--or is it reference?"), sift through the three or four titles available, and then walk out. Every third or fourth trip you'd find something worth buying. Now you have to rummage through hundreds before you realize it's mostly crud.

Then there's the issue of the subject matter. How many Visicalc models can there be in the free world? How many Apple II user handbooks, nearly all with inaccurate data? How many software guides that are nothing but collections of press releases? How many books on data communications that are nothing but collections of menus from public access--that's "no charge to callers," chucko--information utilities?

And for God sakes, how many supposed reference books (most abominable villainy) without indexes???

The dung heap still produces an occasional lotus, of course. There are writers you can count on to turn out excellent pieces consistently. Anything by Doug Clapp or Don Lancaster, for example. But most of the stuff I've received lately looks like it was done by people from Washing Machine Repair doing lunch-break duties for the guys in Publications.

#### The Middlemen Cometh

The rush to print is on, folks. Multiple articles in nearly every issue of Publisher's Weekly has made it plain that there's big bucks in computer books, and the buck-grabbers are at it full time. Publishers, agents, and apparently anybody else with a memory typewriter are dumping computer books on us like junk mail at Christmas. Bookstores continue to make space on their shelves--which means the ink is being bought. Evidently micro buyers and potential buyers are book junkies.

The agents indeed are running amok. Certain big time literary representatives knew enough two years ago to start looking for micro writers. One of them, John Brockman, recently got Whole Earth Catalog's Stewart Brand \$1.6 Mil in advance development funds from Doubleday for a whole earth catalog of micros; and judging from recent issues of Coevolution Quarterly which he also edits, Brand knows as much about micros as I know about appropriate methods of nuclear waste disposal. Take that metaphor as far as vou can.

The fiscally conservative agents are also out and about. I got a visit recently from the staid William Morris agency. out to gather info on the Micro Market. Those folks have a reputation for betting only on the favorites in one-horse races (we're talking safe, friends). No horn blowing here, by the way; they were just brain pickin.'

Like my pappy used to say: "Son, when you see a pig snufflin' out the truffles, the gourmands can't be far behind."

#### **Origins**

It used to be justifiable to spend lots of dough on what we could call "ancillary documentation." The stuff that came with our machines back in the old days (1977-1978) was atrocious. We needed anything we could find just to learn how to keep from destroying our programs. We learned to accept material that wasn't, perhaps, wholly accurate, or that was written by somebody who wasn't really a programmer who could write or a writer who could program. It was enough if someone had discovered a nifty use for something wierd--like Applesoft's FRE function having the tendency to hang your string-heavy programs for five minutes at a time (nasty tendency, that).

The market, I'm told, has matured since then. Documentation provided with the machines or optionally available from the company (\$50 for Applesoft manuals--give me a break!) is much more complete now, and the writers are, for the most part, professionals. The stuff that comes with the //e and with the Macintosh are industry standards for accuracy, readability and completeness. That doesn't mean that there's no need for outside documentation. It does mean, however, that the outside stuff has to provide more than the stuff from the inside.

#### Some Shinier Examples

All this does not mean to say that every computer book ever written is absolute trash. Apple Computer recently commissioned me to devise and compile *Apple Bibliofile*, an annotated listing of books and magazines about the Apple II family of computers published from 1981 through about June of 1983. I read over 100 books on the II and II Plus.

There was some great stuff coming out for a while. Consider:

- Lon Poole's Apple II User's Guide--a great all-in-one guide for the beginner, especially one interested in programming. Clearly laid out and well cross-referenced. Much of the material somewhat out of date for the //e, I'd still make it required reading (Osborne-McGraw Hill, Berkeley, CA).
- Finkel & Brown's Apple BASIC: Data File Programming-excellent for the intermediate Applesoft DOS programmer wanting to know how to create and most effectively use both sequential and random access text files. Intelligently written tutorial style (John Wiley, New York, NY).
- Don Lancaster's *Enhancing Your Apple II*, *Vol. 1-*-good humor and clarity mark this hardware & software projects book, written by one of the most personable computer authors. Tough hardware stuff explained so well that even I (who burns self on cold soldering irons) am

- able to follow it. Best, though, for folks who are fairly advanced (Sams Books, Indianapolis, IN).
- Hofacker & Floegal's *The Custom Apple & Other Mysteries*—for the neophyte hardware hacker. No assumptions are made about previous knowledge; all concepts explained clearly and simply. Not much humor, but great organization (I.J.G. Books, Upland, CA).

There were more good pieces in that list than I mention here, of course; every third or fourth book I read had major good things about it. Hopefully the current trend will reverse itself quickly; things happen fast in the micro world.

#### Coda

Next month I'll try to present a (nearly) wholly positive column. I'll look at two recently published excellent books I actually like: Doug Clapp's *Macintosh Complete* on the outrageous Macintosh Computer, and Alfred Glossbrenner's huge *How To Buy Software*, the only software review text I've seen so far that doesn't read like a press release.

If you know about a decent piece of computer literary gold published in 1984, please let me know. I can't take much more pyrite.

Scot Kamins is senior writer for Technology Translated, Inc. (1047 Sutter Street, San Francisco, CA 94109), a technical writing firm. He is the author (with Mitch Waite) of *Apple Backpack: Humanized Programming in BASIC* (McGraw-Hill/Byte Books, 1982) and has written a number of manuals for Apple Computer, Inc., including the *Applesoft //e Programmer's Reference Manual*. Kamins is writing a series of books on Macintosh BASIC that is to be published this fall by Hayden Books.

#### **New Books & Catalogs**

The Microindex journal is a thoroughly comprehensive index to microcomputing-oriented periodicals. It is a serious effort to organize the vast amount of scattered information about microcomputing as disseminated by the large number of published periodicals. Versions of Microindex will include:

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Database: A Primer (ISBN 0-201-11358-9), by Chris J. Date, sets out to show, by easy-to-follow illustrations and full-scale examples, how computerized files are created and maintained. The focus is on how the interested layman really uses the computer. It provides a frank overview of database management from a user's point of view. 265 pages. \$12.95.

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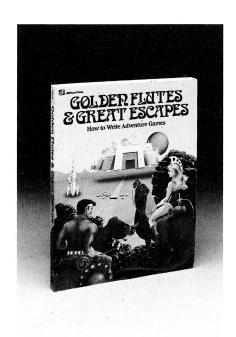
An Apple For Kids (ISBN 0-88056-119-X), by Sharon Boren, is designed for children ages 8 to 13. It is full of illus-

trations (a circus theme) and examples that appeal to kids and motivates them to higher learning levels. Along with this student text (\$7.95), a student activity workbook is available (\$5.95), with tear-out activity worksheets that go with each chapter in the text. The Teacher's Guide is \$14.95. For further information, contact Catherine Filgas, VP of Marketing, at (800) 547-1842. Circle HelpCard No. 244
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8285 SW Nimbus, Suite 151
Beaverton, OR 97005

Handbook of Computer Applications for the Small or Medium-Sized Business, by Howard Falk, aids a company's first, and subsequent, computer experiences to be successful ones. A section giving 28 actual business case histories of computerization is also included. 331 pages. \$19.95. For further information, contact Laurie D. Menyo, Coordinator, Promotion & Public Relations, at (215) 964-4710.

Circle HelpCard No. 245 Chilton Book Company Radnor, PA 19089 Golden Flutes and Great Escapes: How to Write Your Own Adventure Games (ISBN 0-88056-089-4), by Delton T. Horn, describes the process of designing and coding programs. It gives the fundamental rules of creating original, interactive adventure games, plus hints that help make the programming task easier. The book alone is \$9.95, with Apple II diskette as a package, it's \$29.95. For further information, contact Catherine Filgas, VP of Marketing, at (800) 547-1842.

Circle HelpCard No. 246 Dilithium Press 8285 SW Nimbus, Suite 151 Beaverton, OR 97005



BASIC Tricks for the Apple (ISBN 0-672-22208-6), by Allen Wyatt, gives Applesoft programmers a collection of some 35 unique subroutines that provide shortcuts for more efficient programming. There are also many tips on code that needs to be added or left out in order to make a program easier to use, run faster, or appear more polished. \$8.95.

Circle HelpCard No. 247 Howard W. Sams & Co., Inc. 4300 W. 62nd Street Indianapolis, IN 46268 (317) 298-5400

CP/M Revealed is a full working "map" to CP/M; to the console monitor, system manager, and input/output driver package. Coverage includes booting up, logging in, changing memory size, mapping disk space, calling up programs, interfacing, I/O devices, and more. Clarifies many instructions in the Digital Research CP/M manual, and fills information gaps the manual leaves. \$15.95 plus \$2.00 postage & handling.

Circle HelpCard No. 248 Hayden Book Company, Inc. 10 Mulholland Drive Hasbrouck Heights, NJ 07604 (800) 631-0856 (201) 843-0550 (NJ)

A Critic's Guide for Apple and Apple-Compatible Computers, by Dr. Phillip Good, contains evaluations of the most popular spreadsheet, word processing, data management and graphics packages on the market. \$12.95. For further information, contact Laurie D. Menyo, Coordinator, Promotion & Relations, at (215) 964-4710. Circle HelpCard No. 249 Chilton Book Company Radnor, PA 19089

Getting Started with CP/M is a complete beginner's guide. It explains how CP/M operates and describes the structure and functions of its commands. Focuses on subjects most useful to beginners, including handling and caring for diskettes, storing and transferring information, creating and naming files, responding to error messages. The book also details command structures and functions. \$12.95 plus \$2.00 postage & handling.

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The 1984 Directory of Resources for Technology in Education provides information about national and state associations, resource organizations, state departments, of education, computer camps, periodicals, databases, electronic bulletin boards, hardware companies, summer institutes, conferences, degree programs, and funding sources. It is intended to help educators network with one another; each organizational entry lists a contact person, address, telephone number, description and purpose, list of publications, membership criteria and costs, and 1984 events. \$12.95 in paperback; \$19.95 in hard cover. VISA and MasterCard accepted.

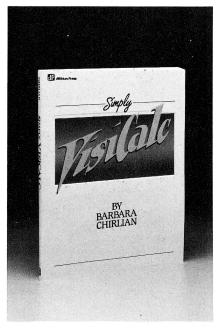
Circle HelpCard No. 251 This publication may be obtained by writing to: Order Department

Far West Laboratory for Educational Research and Development 1855 Folsom Street San Francisco, CA 94103

Polishing Your Apple, Volume 2 (ISBN 0-672-22160-8), by Herbert M. Honig, gives Apple programmers an understanding for writing more advanced software. This sequel is full of usable advice and professional techniques that help make programs look and run like authoritative, market-ready products. \$4.95. Sample programs and routines that appear in the book are available on an optional diskette. Circle HelpCard No. 252 Howard W. Sams & Co., Inc. 4300 W. 62nd Street Indianapolis, IN 46268 (317) 298-5400

Simply Visicalc (ISBN 0-88056-130-0), by Barbara S. Chirlian, outlines the basic concepts of the VisiCalc program and gives you an easy-to-follow description of how it works. It also shows how to work with labels, formulas, electronic sheets and columns. 100 pages. \$9.95. For further information, contact Catherine Filgas, VP, Marketing, at (800) 547-1842.

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SuperCalc Primer (ISBN 0-672-22087-3), by Mitchell Waite, Sharon Venit, and Diane Burns, teaches novice users how to harness SuperCalc's power, and helps all users of this electronic spreadsheet software in working many kinds of "what-if" problems, making investment predictions, and doing financial modeling. It also shows how SuperCalc can be put to work in such everyday chores as setting up a check register to track expenses and reconcile with the bank statement. 218 pages. \$16.95. Circle HelpCard No. 254 Howard W. Sams & Co., Inc.

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CP/M Bible (ISBN 0-672-22015-6), by Mitchell Waite and John Angermeyer, offers experienced users a way to add to their previous knowledge, and offers

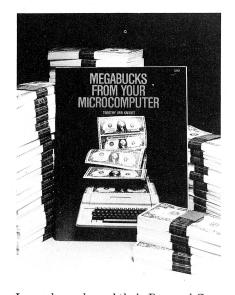
beginners a way to quickly discover the capabilities of CP/M. Its style is that of a reference book. \$19.95. Circle HelpCard No. 255 Howard W. Sams & Co., Inc. 4300 West 62nd Street Indianapolis, IN 46268 (317) 298-5400

Megabucks From Your Microcomputer (ISBN 0-672-22083-X), by Tim Knight, offers advice on buying the right computer to begin with, and on how to get the best possible return on that investment. It explains, in detail, how to write and market software, magazine articles and product reviews and do other kinds of freelancing. \$3.95. Circle HelpCard No. 256 Howard W. Sams & Co., Inc.

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Inmac has released their Personal Computer Support Catalog, containing a selection from over 2000 computer related supplies and accessories for all brands of personal computers. Circle HelpCard No. 257 Get your free copy by contacting: Inmac Department 59 2465 Augustine Drive Santa Clara, CA 95051 (800) 547-5444 in California (800) 547-5447

The CompuTh!nk Guide to Word Processing (ISBN 0-672-22069-5), by Jesse Berst, helps business readers assess their word-processing needs. Checklists and a number of case histories then work toward measuring the strengths and weaknesses of several popular software packages. Advice is also given on selecting printers and disk drives, whether to buy or lease, and on ways to test equipment before buying it. \$12.95.

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Howard W. Sams & Co., Inc. 4300 West 62nd Street Indianapolis, IN 46268 (317) 298-5400

The Apple //e Reference Card is a 16 page summary, on a crisp pink background, that's filled with information about using the //e. \$4.95. Circle HelpCard No. 259 Nanos Systems Corp. P.O. Box 24344 Speedway, IN 46224 (317) 244-4078

The Whole Computer Catalog, edited by Narda Lacey Schwartz, is a complete desktop reference to the computer world. Topics covered include: hardware in an ever changing marketplace, software available and user programmed, the applications that computers are used for, on-line information sources, schools who specialize in computer sciences, careers available, sociological impact of computers, stores, associations, users who own similar equipment who have formed groups to share information, magazines, newsletters, government publications, books (from beginning to technical), textbooks and children's books and the publishers. Over 400 pages. Price is \$35.00, plus \$2.50 shipping. Circle HelpCard No. 260 Designs III Publishers 515 W. Commonwealth Ave. Fullerton, CA 92632 (714) 871-9100

A dBASE II Coding Guide has been created to help software departments formulate their own database standards for microcomputers. 46 pages. \$22.00. For further information, contact Jack Edwards (615) 967-9159 x20. Circle HelpCard No. 261 Associated Technology Company Rt. 2, Box 448 Estill Springs, TN 37330

Follett's Quality Courseware catalog is printed from a data base which is updated daily. The catalog grows and changes with the microcomputer industry. Catalogs cover over 15 subjects from administrative packages to language, arts, and math. Anyone interested in obtaining a free copy of the "living catalog" produced for their machine and in the month they designate, the company says its toll free number can be utilized from 7:00 am to 10:00 pm, CST. For more information, contact Don Rose, Product Manger, at Follett Library Book Company. Circle HelpCard No. 262 Microcomputer Division. Follett Library Book Co. Microcomputer Division 4506 Northwest Highway Crystal Lake, IL 60014 (800) 435-6170



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The National CBBS Directory of over 1,000 computer bulletin board telephone numbers are organized in numeric sequence. The directory also contains a unique key field which identifies relevant information such as the BBS type, its baud rate, operating hours, and special comments specific to each BBS. \$2.00.

Circle HelpCard No. 264 Thomas Wnorowski 3352 Chelsea Circle Ann Arbor, MI 48104

Growing up in the computer world will be easier if your child understands computers. Let Colonel Byte take your child on a trip through Cybernia with the help of this delightful book. Computer Parade traces the adventures of Katie and her brother after they fall into the family computer. It reads like a story book yet it actually teaches the basics of computer operations. Any youngster age 4-10 will delight in this book. It's easy to read and richly illustrated in full color. Help your child grow up computer literate \$9.95 each plus \$2.00 shipping and handling per book.

Circle HelpCard No. 265 Creative Computing Press 39 East Hanover Avenue Morris Plains, NJ 07950 (800) 631-8112 (201) 540-0445 (NJ)

#### Apple Education Foundation Continued from page 48

ban Connecticut is rich in local history. For this project, 4th grade students will be involved in designing a database requiring that they gather, organize, analyze and synthesize the material. One objective will be to reconstruct the past with creative thoughts towards the future. Upon completion of the project, the database will be shared with other schools in the district.

- English Fluency via Computers. The state of Washington is home for many native Americans and Hispanic people. This project will be in rural areas and carried out at Tribal schools, elementary thru college. Many of these students use non-standard verbal and written communication skills, based on rural English and patterns of non-English languages. The goal of this project is to improve their standard English skills through the use of word processing software.
- Teachers of Visually Impaired Students for the State of Tennessee will develop a model for other educators of visually impaired students. The goal of the grant is to provide an educational model that will give VI students the opportunity to develop computer literacy.
- Teaching and Understanding Geometric Relationships through LOGO. Three inner city schools in Atlanta, Georgia will gather parents, grandparents, and teachers to learn and in turn, train students in high school mathematics courses. Many of these students have failed and avoid math programs. With the success of this program, the failure rate will be decreased and turned around to positive and overpopulated class.

The other programs were equally exciting and diverse. Awarding of these grants is only the beginning. Barbara Bowen will work directly with all 12 to 14 grantees during the next year and we will be reporting on their success in the future.

#### Where it all began

Apple Corporation is fortunate to have had two (and now three) people committed to working with schools and educators. They hope to see the personal computer become a

learning tool as functional and important as a textbook. Dr. Barbara Bowen just celebrated her first anniversary as the head of the Apple Education Foundation (AEF). She has spent many years in the field education before joining Apple. Science Education was the theme of her doctorate at Cornell University. From there she went to New York City where her knowledge was put to use in teacher training programs, working with educational the-



Dr. Barbara Bowen

orists and doing educational consulting. The main emphasis of all her education pursuits was in the area of Elementary Science Education.

Using this background and experience with educators at New York University, Barbara was part of a team awarded a National Science Foundation grant. The grant's objective was to train junior high school teachers in New York City. From there she went to try out some of her own theories at Corlears, a private school in New York which spanned nursery school through the 6th grade. Again, her main emphasis was to integrate the various science programs at different grade levels.

Challenges from within the academic environment have a strong pull for Barbara, and along with her job at Corlears, she taught Childhood Science Education to teaching majors at Queens College. "Microcomputer" was becoming the buzz word, and people did not know exactly how it would impact education. Many teachers in the classroom were getting nervous, not knowing what would be expected of them in the future. While some got nervous, Dr. Bowen got curious. Spring vacation during 1980 took her to Washington, D.C., and an introduction to the world of microcomputers. The following summer she was offered the opportunity to participate in a joint program between the National Science Foundation (NSF) and National Institute of Education (NIE), exploring the applications of microcomputers in the learning environment. When a discipline is as uncharted as computer education, all involved are eager to share their ideas and knowledge. Companies were sprouting up with software for these new machines.... but to many of these early computer educators the question was (and remains) is there life after (CAI) drill and practice?

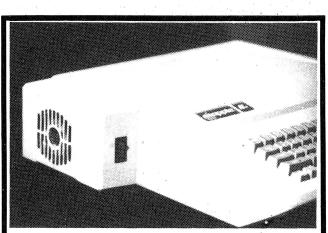
In her first year at the Foundation, Barbara used her strong educational background to help determine the present goals of the AEF. In her role as the Foundation's director, she recognizes the importance of taking the microcomputer into the future and to address the issues of learning. How do students learn with a computer, what do they share, what is intuitive? How does a computer relate to a students's life outside of school? Can a computer help a student to learn or to think? In order to answer some of these questions, Barbara feels that it is important to give equal attention to the needs of teachers. The majority of early software for education was designed not by educators but by computer personnel.... is this software good for learning? How will teachers who were trained to educate in a traditional manner use these new tools?

In our discussion, Barbara said, "In early childhood education (nursery and pre-school) computer software developers have been forced to look at what makes the computer function as a learning tool." While the success is important, the reason for this success is equally important. At that age, children have a short attention span, they cannot read, nor can they be force fed. There have been many software publishers who successfully met this challenge (such as the Learning Company, which got its start with an AEF grant). In the early childhood programs, interaction is the key . . . kids get involved. When the child gets older and can read, he becomes a captive audience in an assigned seat. At this point the microcomputer is all too often turned into an expensive drill and practice tool. This is effective for giving the teacher more time and developing familiarity with the computer, but not for utilizing the potential of the equipment or the student. Overcoming this problem meant going back to the educator, and to the theories of people like Jean Piaget, to devise ways to make the computer a powerful learning tool. Questions of what good learning software will look like and how this technology is to be effectively integrated into the classroom are some of the directions the AEF has taken with their recently awarded grants. An important consideration in awarding a grant is that the developers or investigators be willing to share not only their results, but the process.

Another question facing Barbara and the Board of Advisors is equity of economics and geography. Projects proposed by educators in communities with a lower tax base for education are strongly encouraged to participate in the application process as well as individuals working in rural areas. Mentioned before, the AEF grants are for equipment only, and these microcomputers will go a long way toward enhancing computer enhanced education in economically disadvantaged and rural school districts.

The majority of the projects are based on two years from award to completion. In addition to overseeing the awarding of grants, another of Barbara's projects is to develop and maintain contact with other funding agencies. Many of the larger corporate foundations provide dollars for basic educational research projects. She has established communication with corporate funding foundations such as Exxon, Carnegie, Ford and the Sloan Foundation. These collaborations and exploratory work are for projects that have a broadly based focus on the impact of computer education.

While Barbara has her goals for the future of the Apple Education Foundation clearly defined in her own mind, she is quick to recognize that the successful efforts of Carolyn Stauffer and Peggy Redpath set the Foundation in motion



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and brought it to its present stage. Carolyn is presently the Education Account Manager in the Software Industry Relation division at Apple. Her beginnings with the Foundation stemmed from 16 years experience as a researcher at Stanford and RMC Research. During that time she was designing some of the first educational curriculums using computers. Making the transition to industry came in 1978 when she interviewed with Mike Markkula. In those days, one did not necessarily interview for a specific position. It was more like "lets see what you can do and where we can utilize your skills." Carolyn's knowledge of education, computers and granting foundations was the perfect match for this new corporation's project.

Carolyn was instrumental in setting the philosophical ground work for the Foundation because of her experience. She states, "Foundations, by their nature, can take risks on new directions and support what will become mainstream several years down the road." Some of the projects that received grants between 1979 and 1982 included foreign language studies, business and economic educational applications, nursing curriculum and health awareness, teaching basic music skills(\*), methods to improve library reference materials, etc. . The list goes on to cover over 160 different projects for equipment granted to colleges, universities and individuals all over the country. An additional service of the Foundation was to recommend a publisher once a project neared completion. The publisher did the final editing of the software and developed distribution plans. Out of this came the many excellent software programs now available for education.

In addition to the growth of the Apple Educational Foundation within this country, Apple Computer, Inc. has established a second foundation center in Canada. Following Apple's pattern of thinking big and doing it right, there are plans to continue the practice of providing computers and peripheral equipment for educational purposes to foreign countries. It is expected that the Foundation will open international offices in Europe, the Far East, Australia and New Zealand. Following these openings, other areas of the world such as the Middle East and South America will establish their programs. While the overall goal of each project is the same, the microcomputer will allow for the development of educational programs based on individual cultural and regional needs.

After four years with the Foundation, Carolyn organized and became editor of the Educational Journal and Peggy Redpath took over as administrator. Dr. Barbara Bowen is taking the best of the past, combining it with her knowledge of educational theories to guide the foundation in new directions. While computer games are here to stay, the educational applications for Apples as a teaching/learning device is still in its infancy. The twelve grants awarded in February, 1984, are just the beginning to understanding what can be done in an educational environment. If you have an idea that you feel has educational merits, contact the Foundation offices at 10201 North DeAnza Blvd., Cupertino. Ca (408) 973-2105. The staff will be happy to send you a form and detailed guidelines for submitting a grant application.

(\*)Note: This one is special to me, as I was Director of Marketing Services for Syntauri corporation at the time. I personally delivered an AlphaSyntauri synthesizer to Dr. Kuhn at his laboratory on the Stanford campus.

#### CADRE and the Teacher's Institute Continued from page 54

welcome in everyday life.

The development of computer arts into independent forms of expression will depend on creative approaches to imaging processes. Joan Truckenbrod, of Northern Illinois University, urged that electronic imagery not mimic other media, but rather be allowed to assume characteristics unique to the technology. Contrasting computer graphics generated through programming or the use of a graphic toolbox with digital image processing techniques, Frank Dietrich, of West Coast University, extended conceptions of electronic art making along dimensions of time and geometric space.

Sponsors of the conference were San Jose State University, Mission College and the West Valley College Foundation. Marcia Chamberlain, the project director, edited a catalog for the conference -- a major publication containing conference papers, reviews and reproductions from thirteen gallery exhibitions, concert programs and the conference schedule.

Marcia measured the success of the conference in the way people who ordinarily might not interact began to find a common ground of terms and metaphor to share their visions and concerns. A software designer used metaphors from weaving to explain his craft. An artist discussed sympathetic interfaces with a programmer. A musician talked about pushing nature in sound. From our different dialects a dialogue emerged.

#### The Teachers' Institute

Toward the end of the conference week, an institute for teachers began. The staff of the institute was composed of four teachers: one from each teaching level -- elementary, secondary, community college and university. All of us use the computer in our teaching and teach its use. The teachers attending were also from all levels, from a local primary teacher to chairman of an art department at an Eastern University. Most of the institute activities were held at DeAnza College in Cupertino.

Infused with a wealth of ideas and images, the institute staff and attending teachers took a long hard look at the possibilities and realities of computer arts in schools. And on Saturday, fingers flew over keyboards and touch pads as the teachers experimented with arts software.

We planned the institute around the beliefs we hold about art education in general. Taking a lead from the Visual and Performing Arts Framework for California Public Schools: Kindergarten Through Grade Twelve, the institute dealt with the commonalities among the arts, the unique aspects of each discipline, and interrelationships to be developed among the arts and other subject matter areas in school programs. These approaches in themselves are not new: what made our institute unique is that we added the microcomputer to our notions of commonalities, uniqueness and interrelationships.

We also divided institute presentations among the instructional components of arts education: aesthetic perception, creative expression, arts heritage and aesthetic valuing. Again, we related these to instruction in computer arts.

We began the institute with attention to the aesthetic

qualities of electronic arts. Computer art and music present sets of qualities that are both like and unlike those in noncomputer art. One of the last sessions of the conference was the first session of the teachers' institute. In this session John Chowning of Stanford University explained why he works to recreate natural sound with a computer. He explained that with the electronic decomposition of natural sound into its constituent parts comes knowledge about that sound. And when a composer better understands natural sound, including the qualities that make sounds pleasing, he is better able to create electronic sound that is also pleasing. For Chowning, the analysis of natural sound provides access to the qualities he wants to provide in electronic sound. Recognition of the qualities of one form of music reveal qualities for another.

During the second session of the institute, Dede Bartels, an elementary art teacher, presented a series of lessons developed for a summer computer art camp. These lessons also dealt with aesthetic qualities of computer images and images produced in more traditional ways.

At the summer camp, elementary aged students spent an hour and a half a day for three weeks in the computer room working with SUPER TURTLE, a LOGO turtle graphics program. They then spent another hour and a half in the art room working with traditional media but solving problems similar to those presented in the computer room. The goal of the activities was to develop perceptual sensitivity to aesthetic form. The activities were designed in pairs, one for the computer room and one for the art room.

One pair of activities was to create illusions of space through the use of different sized and colored triangles. Students varied size and placement of the simple form to make some triangles seem farther away than others. They worked with overlap and color perspective both on and off the computer. Whole worlds of triangles, sailing off into space were created.

Another pair of activities was to play with the apparent movement of a triangle. On the computer, the students made a triangle appear to change its orientation when in reality it only changed shape. Off the computer, in sculptural form, students made triangles appear to change shape as they actually changed orientation in space.

And a third pair of activities dealt with the edges. On the computer, in beginning turtle graphics, the edges of shapes are very hard. They are either straight or somewhat jagged. Off the computer, even the youngest artist can create a whole range of edges. Students made drawings of hard edged turtles on graph paper and then tore papers to create a whole herd of soft edged turtles.

Of course, sensitivity to aesthetic form depends somewhat on the concepts and categories one has for reflecting on one's response to a work of art. Developing a vocabulary for describing aesthetic qualities of computer arts is not always easy. Sometimes we just can't find the right word to describe what we see or hear.

I presented an "aesthetic game" to be played with computer graphics called "Aesthetic Awards." In this game, students give awards to computer images according to aesthetic qualities they see in the computer image. The awards themselves are rosettes made by children from colorful papers and glue. On each award is a word describing an aesthetic quality. Each word is different; each award is therefore different. Words can describe concrete, sensory qualities like lines and shapes -- fuzzy, meandering, zigzag. They can describe expressive qualities like feelings and mood -- warm, lazy, agitated. They can describe formal qualities like pattern and composition -- architectural, balanced, repetitive. And they can describe technical qualities like high resolution and modular construction. All of these categories make up our response to works of

The activity takes on a game quality when the words describing aesthetic qualities are given to students in a random manner and when only one award can be given to one computer image. In any one showing of computer images, students giving awards first have an easier time finding just the right image to be the recipient of a specific award. Students having the last "turns" find it much harder to assign their awards. The game gets very exciting when you allow for debate. One student can displace another's award only after reasoned argument that his award is more appropriate for the computer image than another. The end of the game comes after much discussion and finally, consensus.

We completed our focus on the aesthetic qualities of computer arts with the viewing of a video tape about the artist David Em, produced by Dan Rothenburg and James Seligman. On that tape, Em shows and talks about relationships between his highly developed computer images and the noncomputer art he produced before his introduction to the computer. Textures appearing on surfaces in computer images are seen on surfaces of pre-computer sculptures. Colors and forms reappear. The integrity of the artist holds true across media. David Em's images and textures began in his off the computer art and were carried into his computer art. The integrity of a child will probably hold true, as well.

Another component of arts education is arts heritage. Lili Quirke, an instructor at DeAnza College, was one of the early pioneers in computer graphics, earning a doctorate in computer generated graphics from Columbia University in the 60's. She provided the institute with a display of reproductions of electronic art produced over the last two decades. With a few reproductions of well-known but noncomputer art interspersed among the computer images, speculation grew on how a computer might have been used by Uchello or Cezanne.

Lucia Grossberger, a visual artist and creator of the Designer's Toolkit extended the possibilities for reflection on the cultural influences of computer art and on aesthetic valuing. We saw a set of slides of faces, "painted" by Lucia on the computer. Initially, an image was transmitted into the computer by a video camera. Then Lucia created multiple variations, electronically. She talked about the creative process and how quickly she is able to produce alternate images. The images are almost instant: she has an instant wealth of faces. Her problem is how to choose among all the alternatives. One of our questions was how we learn to choose and value a few images among an almost "throw away" amount, and, of course, how to help children learn to be selective and to value their own production in an age of technological production.

Both Batya Friedman, of the Lawrence Hall of Science,

and Barbara Bowen, of the Apple Education Foundation, reminded us of the relatedness of math, science and the arts. Batya demonstrated software she developed for use with children that teaches math and science concepts through the manipulation of visual images on the screen. Batya's software was closely related to a program presented by Susan Brennan during the closing symposium of the conference. As a researcher at Atari, Susan has developed a caricature generator. It creates line drawings and then distorts the drawings in a series of steps controlled by the artist. Batya's students experience a simpler model of the same process. A shape is transformed from one geometric shape to another using simple commands, a coordinate system and arithmetic.

Barbara demonstrated the power of LOGO in presenting both visual and mathematical order. We in the arts talk about the "language of art" -- lines, shapes, textures, form and composition. Barbara demonstrated the language of an imaginary "turtle" and developed notions of how a visual language can be built for the computer through the use of LOGO. She deftly wove graphics, geometry and programming to produce beautifully simple patterns on the screen through sets of instructions to the turtle.

A lively discussion of the most appropriate uses of a computer in an arts program was initiated by a presentation on the multiple uses of computers in a music program. Carol Prater, a school district music specialist, outlined all the ways she uses a computer in her music program. One use is for computer assisted instruction. Students learn the names of notes and key signatures, the meanings of special terms and about famous composers. The computer provides simulations for directing practice. Tests can be given on the computer, with instant feedback if necessary. An authoring system helps her write her own computer assisted instruction.

Prater also uses a computer for management of the music program. It's used to catalog a district-wide collection of music and to keep inventories of instruments. The computer also helps manage grades and attendance. And it serves as a word processor.

But what about using the computer for such mundane tasks? Don't such uses occupy a machine that ought to be used to assist students in more creative endeavors? The use of the computer as a tool for creative thought and production ought to come first, according to one of the institute participants. Ah yes, everyone agreed, but how?

The last day of the teachers's institute was given to experimentation on computers. We met in a lab of Apple //e computers, with more than one per participant. We began the day in one end of the lab with turtle graphics. Our goals were to give just a taste of programming and to introduce the power of conditional statements in LOGO for creating multiple variations with a fixed set of lines and shapes. We also wanted the teachers to write a procedure that included both sound and visual images. We used SUPER TURTLE because of the independence it's menus afford and sound capabilities.

At the other end of the lab, we set up sixteen computers with art and music software - sixteen different packages. We scheduled the rest of the day for demonstrations of the packages. A participant could watch as many demonstrations as he or she wished, try any of the packages "cold," or stay with turtle graphics.

Ken Sakatani, a junior high teacher, demonstrated high level packages for the Apple Graphics Tablet. We compared features and discussed the relative advantages of menus on the screen and menus on the tablet. Ken talked about classroom management of the computer, tablet and software.

I demonstrated the Koala Pad and the Chalkboard Power Pad. We discussed the use of touch pads by the youngest child. We drew parallels between interactive computer activities and other classic activities, like playing with blocks and in a sand box. Young children construct and construct again. The joy is in the experimentation, not the product. The Chalkboard Pad, in allowing for multiple inputs from many fingers, seemed almost ideal for the youngest artist and friends to "finger paint" on the computer.

Jay Bartels, a university student, demonstrated his own software for the Apple Color Plotter. Luz Bueno and David Stonerod, artist and teacher, shared a simple pre-LOGO program they have developed for their arts teaching. Their program helps beginning computer users find their way around the computer while at the same time create simple drawings and patterns.

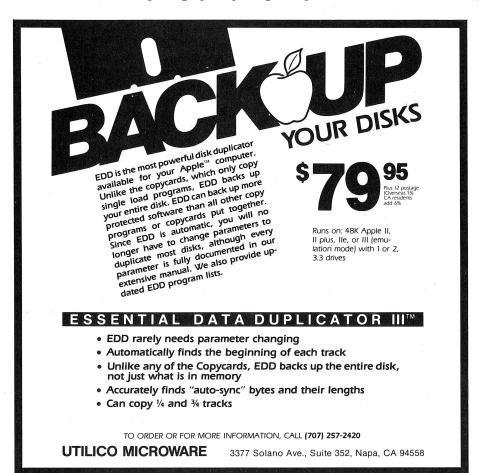
Keith Abbott and Stephen Vincent, poets, talked about word processing software and showed examples of work done by their students on an Apple and printed with graphics. A dot matrix printer is a new slate for the poet. Words can be arranged and rearranged. Type faces can be varied. And with the help of a graphics package, the poets's page is like the sandbox again -- designed, redesigned and presented in many ways.

Beyond the wonders of software, synthesizers, pads and peripherals, however, questions remained unanswered. Some questions were easy to answer. Almost everyone learned how to initialize a diskette, and why a little triangle is called a turtle. Other questions were harder to answer. Budgets, management, software selection, equipment and programming languages all came under question. And of course, the biggest questions of all had to to with the structuring of curriculum.

We all know that there are no automatic consequences in the teaching of the arts. Good teaching requires the structuring of activities. Lots of work remains to be done if we are to help our students realize and appreciate the image and sound making potential of the computer and if we are going to use the computer as an instrument that affords new ways of meeting the goals we already hold for arts education.

We closed the day, and the institute, with planning for another institute. We all agreed to spend the year developing our skills and looking for answers and then come back, as one large staff, each teaching the others!

Pamela Sharp holds a doctorate in art education from Stanford University. She is presently teaching a course in microcomputer arts at the Center for Experimental Interdisciplinary Arts at San Francisco State University. Her book on LOGO, "Turtlesteps," is soon to be published by the Robert J. Brady Co.



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#### What You See Is What You Plotted

Continued from page 56

Upon trying to recreate this picture, one realizes the process the child had to go through to achieve the creative results. The child spent hours programming, choosing options, debugging; the child was learning to think in an organized fashion. The child can then take this graphic representation and use it to enhance his explanation of the concepts and processes he has learned.

If a school is in the process of evaluating whether the Plotter would be a valuable acquisition, it must be remembered that its use with LOGO and the interface program is only one area of utility. It can also be used in curriculum development, used with AppleWriter and used to print to transparencies for staff development, to name a few. Watch for an Apple Educational Package to be made available sometime during Spring, 1984.

# THE "Turtle" AND THE SIX-YEAR-OLD

by Gini Shimabukuro

nd the turtle crossed the finish line and won the race, while the rabbit was very disappointed. But, he learned a lesson: that, in the long run, step by step steadiness is sure to win!" (Paraphrased from Aesop's Fable)

And so my little First Grade computer students, thirtythree in all, at Corpus Christi Elementary School (Oakland Diocese of California), last fall were introduced to the TURTLE. A heartwarming fellow, poorly represented in years past, he was suggesting to them thorough, sequenced learning, rather than the sporadic, fragmented approach of the over-confident rabbit.

Little did they realize at this first computer classtime that the Aesop turtle was an outdated, unappreciated version of the new technology TURTLE with whom they would soon identify. Ironically, the "LOGO" TURTLE would prove, to their amazement, to be the FASTEST TURTLE they could have ever imagined!

Throughout the fall, I devoted a lot of computer classtime to "PLAYING TURTLE," that is, assigning one student to the role of TURTLE while the rest of the class practiced giving the TURTLE instructions. For example, "TURTLE, turn around!" And the TURTLE turned and turned, without stopping until given the command, "STOP!" At this point, my students began to realize the need to be very precise in directing the TURTLE. Another time, our goal was to get the TURTLE from one corner of the classroom to the teacher's desk and then have the TURTLE sit down. All the students crowded around TURTLE and were very involved in its movement. When we accomplished our goal, everyone burst out in applause for TURTLE and for themselves!

From very general commands, we evolved into more specific "LOGO-like" commands, such as "QUARTER TURN TO THE RIGHT," "QUARTER TURN TO THE LEFT," "FORWARD # STEPS," "BACK # STEPS," with everyone participating in the body movement. "TURTLE Time" became a regular computer-time Exercise activity.

By the time our "little turtles" were formally introduced to the computer screen TURTLE, they were well-prepared to deliver "RIGHT 90" (that is, quarter turn to the right) and "FORWARD" commands. And when they discovered that they could easily vary the "RIGHT" command to other numbers, such as "RIGHT 33" or whatever number they "thought out loud," in addition to extending TURTLE steps into the thousands with the "FORWARD" command, they squealed with delight at the speedy TURTLE "wrapping" the screen in formation of checkered or plaid designs! From that time on, these six- and seven-year-olds became committed to identifying with the incredulous TURTLE, never again to be viewed as slow and boring.

In January of this year, thanks to the ingenuity of Apple Computer, I introduced yet another visual manifestation of the TURTLE, the impressive Color Plotter. The boys and girls meticulously noticed, and asked about, my every gesture in setting up the Color Plotter in their classroom for the first time. After I plugged it into the socket, turned it on and placed their now-favorite little beastie, the TURTLE, on the plateau to the rear of the pen carrier, I faced them and announced, "Once again, boys and girls, the TURTLE!"... and the Color Plotter TURTLE musically clicked away in "THAT'S TOTAL!" selection  $\alpha f$ pencolor. "AWESOME!" came their accolades at a demonstration of the TURTLE's little pens, along with its swift movement across the paper. These "little turtles" were readying themselves for a united plunge forward to investigate another extension of their beloved TURTLE.

After I instructed the Color Plotter TURTLE to "PLOT," and, then, loaded a LOGO file from the Apple Color Plotter LOGO Interface Demo Diskette, the boys and girls unconsciously agreed to group silence, for they were now HEARING the TURTLE speak in a musical rhythm that is as lyrical as it is precise in sound. Each time I raised before them a finished sheet off the Color Plotter, there was "button-popping" pride in the result, which has added stimulation for continuing to learn LOGO.

Over the past months, the boys and girls have developed an impressive confidence in their abilities to maneuver the LOGO TURTLE. They had absolutely no problem figuring out how to program a SQUARE, and then a RECTANGLE, and then distinguishing between the two procedures.

They are in love with the LOGO TURTLE, whom we've named "MYRTLE." Romanticizing the TURTLE for them through visual aids has enabled these six- and seven-yearolds to develop a learning relationship with the computer in which they can exercise their wills in a productive, "active" manner, and their minds in a creative, yet logical, journey of self-discovery.

# **IEW**Stuff

### **New Products For The Apple**

**Edited by Gene Wilson** 

The most comprehensive listing and description of new temptations, delicacies, and necessities for your Apple. Notice too that we've made it even easier for you to find out more about these items; just circle the corresponding number on the Apple Orchard Direct Help Card a bit farther ahead in this issue. We'll forward the requests directly to the manufacturer.

Producers of products for Apple Computers should send new releases two months in advance:

#### NEW PRODUCTS EDITOR **Apple Orchard** P.O. Box 6502 Cupertino, CA 95015

The IAC cannot be held responsible for claims made by manufacturers.

Contents NEW FROM APPLE HARDWARE Disk/Tape Mass Storage Input/Output

**Interface Cards Modems Co-Processors** 

**Printers/Plotters** Clocks

**SOFTWARE** 

**Business** (General)

Educational **Financial** 

Games/Simulations

Graphics

Languages (Programming)

Music

Utilities

**Word Processing** MISCELLANEOUS

#### **NEW FROM APPLE**

Duodisk is a floppy disk drive unit which contains two half-high, 140 Kbyte drives side-by-side in a single case. The unit is exactly the width of the Apple II and can sit between the computer and monitor. Mechanical improvements include a new disk eject mechanism and advanced head positioning mechanism which gives a more precise reading of half-tracks. Duodisk comes with a controller card that connects it to any Apple II, Apple II Plus or Apple //e. \$795.00. Available from authorized Apple dealers worldwide.

ProDOS, Apple's new operating system for Apple II and //e computers, is being shipped with each Disk II and Duodisk floppy disk drive. The DOS 3.3 system master diskette will continue to be shipped with each drive as well until at least the end of the summer. In addition, ProDOS can now be purchased separately from any authorized Apple dealer. Called the ProDOS User's Kit, the product includes the ProDOS user's diskette and manual, and will sell for \$40.00.

#### HARDWARE

#### Disk/Tape **Mass Storage**

The ICE Microcube Mass Storage System uses five and one-quarter inch Winchester hard disk drives. Formatted configurations are available in 5, 10, 21, and 42 MByte drives. The Konan adapter supports two drives. Complete systems include the host adapter, drive, controller, cables, power supply. software and installation manual. List prices start at \$2195 for the 5 MByte unit and top of the line is \$4712 for the 42 MByte system. Circle HelpCard No. 101 Space Coast Systems, Inc. 301 S. Washington Avenue Titusville, FL 32796 (305) 268-0872

The ADIC Data Library is a 67 megabyte cartridge tape system suited for disk backup and multiuser network systems for the Apple computer family. It features error detection/correction as well as transfer speeds up to 4 megabytes per second. The price ranges from \$2900 to \$4900 for the interface, cables, documentation and software. Circle HelpCard No. 103 ADIC

723 9th Avenue, Bldg. A Kirkland, WA 98033

The Infax 101A disk drive subsystem utilizes a removable 10 megabyte data cartridge. Non-contact head to disk interface with cartridge write protect switch. Features include microprocessor-based user transparent error detection and correction, automatic start-up diagnostics, idle drive shutdown, and error recovery procedures. Host adapter/controller and software supports up to 4 drives simultaneously. Supports Apple DOS 3.3, Pascal and CP/M. Includes software for quick copying, backup and file management. Autoboot capability is slot independent. Circle HelpCard No. 104 Vufax, Inc. 5301 Covington Highway Decatur, GA 30035 (800) 241-1119

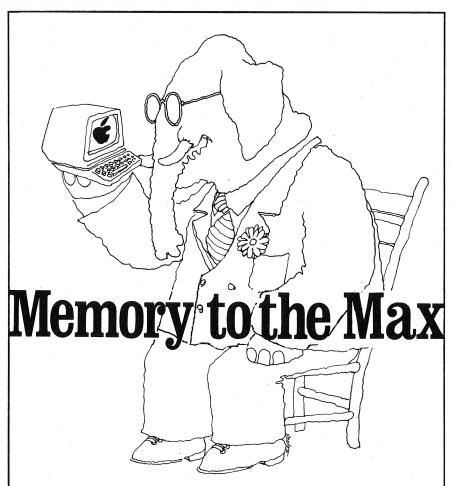
#### Input/Output

(404) 981-6778 (GA)

The new Microbuffer II Plus allows you to print and process simultaneously. It can also be used with virtually any printer, serial or parallel, or both at once. Fully supports the Apple //e 80column format and 80-column screen dumps from the Videx 80-column board in the Apple II or II Plus. Supports over 30 commands for text formatting, sending printer controls, printing screen dumps and setting up the MII Plus itself. Includes graphics print routines for nine popular printers. In 16, 32 or 64K models.

Circle HelpCard No. 107 Practical Peripherals 31245 La Baya Drive Westlake Village, CA 91362 (213) 991-8200

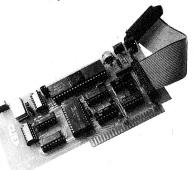
Starfighter analog joystick for your Apple computer has a new state of the art thick film technology that outdates



The DiscMaster II by Data Cue expands the storage of your Apple II or Apple II compatable systems. The DiscMaster allows you to connect two 8" or two 31/2" double density disk drives per controller to your computer. The drivers are supplied for DOS 3.3 and PASCAL 1.1 operating systems. Optional drivers are available to read and write standard 8" CP/M, IBM P.C., and SUPERBRAIN disks.

The DiscMaster II is completely contained on a single Apple II compatible I/O board which can be installed in any one of six of the eight peripheral slots in the computer. The

DiscMaster uses the latest technology in floppy disk controllers to give a price performance ratio unmatched in the industry.



#### Disk size for PASCAL and DOS

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the potentiometer and mechanical linkage assemblies found in most common joysticks. This advanced design includes throw selector and sensitivity switches, two pushbutton trim levers. Circle HelpCard No. 108 Suncom 650E Anthony Trail Northbrook, IL 60062

S.A.M., the Software Automatic Mouth, is a speech synthesizer for Apple computers. It uses your computer to simulate the sounds of human speech. You use S.A.M. to make your programs talk. It does it all in software. You can control S.A.M.'s inflection, change the pitch of it's voice and the speed of the speech. Use phonetic input to get perfect pronunciation or use Reciter, the excellent English text to speech converter on the disk for highly reliable results with ordinary English input. With the new "Knobs" feature you can create a variety of different voices for S.A.M., ones that sound like different people speaking. Accessible from Pascal, BASIC and machine language. Includes 8-bit digital-to-analog converter and audio amplifier on a card. \$99.95. Requires 48K, disk. S.A.M. can be loaded into a RAM card. You will need a speaker or use your stereo system. Circle HelpCard No. 109

Tronix 8295 South La Cienega Blvd. Inglewood, CA 90301 (213) 215-0529

A new Automatic Game Port Expander for the Apple II Plus or //e, the Swapper Stopper, plugs inside your Apple and provides automatic switching between joystick and paddles. Simply pick up either joystick or paddles, and Swapper Stopper automatically passes control to that device. Requires no externally mounted cables or switches, and installs in seconds. (specify Apple II Plus or //e) \$26.95.

Circle HelpCard No. 110 A.B. Computers 252 Bethlehem Pike Colmar, PA 18915 (215) 822-7727

#### **Interface Cards**

The Uniprint Parallel Card, for Apple II Plus and Apple //e computers, is compatible with a wide variety of printers. Over 25 printers are listed in the installation manual. Uniprint features include graphics transfers of HI-RES pages one or two, expansion and shrinkage of the image, and rotation of printout at right angles. Color transfers are also possible on the Dataproducts (IDS) Prism printer. \$89.00. Circle HelpCard No. 112

Videx Corvallis, OR 97330 (503) 758-0521

The Neptune extended 80-column card gives increased video display and up to 192K memory using just one slot in the Apple //e. Designed expressly for the auxiliary slot, it is available with 64K, 128K, or 192K of RAM memory. The RAM memory can be utilized as a solid state RAM disk. Additionally, VC-Expand/80 software supplied wtih each Neptune expands VisiCalc up to 220K of workspace memory and provides many other VisiCalc enhancements. DOS, Pascal and CP/M Pseudo-Disk patches and a DOS relocation program are also included with each card. Circle HelpCard No. 116 Titan Technologies, Inc. P.O. Box 8050 Ann Arbor, MI 48107 (313) 973-8422

#### **Modems**

Micromodem //e plug-in board companion software, modem and Smartcom I, gives your Apple its own telephone connection. You can access data bases, bulletin boards, and the varied resources of information services. Communicates with any Bell-103 type modem over ordinary telephone lines at 110 or 300 bits per second. Installs easily in an expansion slot, and requires no outside power source. It connects directly to either a single or multiline modular phone jack, to perform both Touch-Tone and pulse dialing. Micromodem //e dials, answers and disconnects calls automatically. Operates in either full or half duplex. A built in speaker lets vou monitor vour calls while dialing. Smartcom I software lets you make a call, end a call, or answer a call. Stores three of your most frequently called telephone numbers and one prefix. It also remembers the last number dialed. Accepts DOS 3.3, Pascal, CP/M 3.0 or CP/M Plus operating systems and accommodates up to six disk drives and several printer interface cards.

Circle HelpCard No. 117 Hayes Microcomputer Products, Inc. 5923 Peachtreee Industrial Blvd. Norcross, GA 30092 (404) 441-1617

Starcom is an auto dial modem which is easy to install in your microcomputer system. It is a 300/1200 bps modem with automatic dialing, automatic log-on and automatic answer. Standard RS-232 cable connectors and modular telephone jack. Very compact unit

measurements 1.25 x 6.5 x 7.5 inches and only 1.5 lbs, \$450. Circle HelpCard No. 118 Incomm 115 N. Wolf Road Wheeling, IL 60090 (800) 323-2666

(312) 459-8881 (IL)

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#### Co-Processors

The Speedemon from MCT will make any Apple II, II Plus, or //e run 3.5 times faster. Makes your Applesoft, Apple Fortran, word processing, D.B. Master, Pascal, Or VisiCalc programs really move! \$295.00 Circle HelpCard No. 122 Micro Computer Technologies 1745 21st Street Santa Monica, CA 90404

The new Appli-Card, featuring CP/M by Personal Computer Products, Inc., is the next generation in Z-80 cards for your Apple computer. This plug-in board contains the complete hardware and software to let your Apple run the thousands of CP/M application programs available. Choose from two cards, both with Softvideo, CP/M and Appli-Disc software. 4MHz 64K Appli-Card \$295.00, 6MHz 64K Appli-Card \$375.00.

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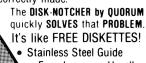
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#### **Printers/Plotters**

Finger Print is a hardware upgrade kit (offered as a plug-in module) which greatly enhances the Epson FX-100 printer. Users can select from eighteen modes or an endless number of combinations by tapping the panel buttons.

Circle HelpCard No. 126 Dresselhaus Computer Products 837 E. Alosta Avenue Glendora, CA 91740 (213) 914-5831

PRinterFace and GraphiCard are parallel interface products for the Apple II. PRinterFace offers 27 commands that let you format text, send controls to the printer and dump 80-column text screens from the Apple //e, \$75.00. GraphiCard gives you all that, plus graphics capabilities for 37 of the most popular printers. Eight additional commands permit a variety of graphics, screen dumps, including side-by-side, top-to-bottom, double size, inverse, emphasized, rotated and mixed text and graphics. The GraphiCard will give 80column screen dumps from the Videx 80column board. \$99.00. Circle HelpCard No. 128 Practical Peripherals 31245 La Baya Drive Westlake Village, CA 91362 (213) 991-8200

The Qantex 7030 matrix printer provides letter quality print with high density, double-pass printing in a 24 x 18 matrix (37 cps). As a near letter quality word processor (75 cps) the 7030 uses a 12 x 9 matrix in a single pass mode. As a data processor, the 7030 cruises along at 180 or 150 cps bidirectionally. Graphics mode provides a resolution up to 144 x 144 dots per square inch. It even makes available an enlarged character mode useful in producing custom labels. You choose from almost 20 fonts such as Script, Courier and APL. You also get proportional spacing, justification, auto underline, overprint, bold and a host of other features \$1.695. Circle HelpCard No. 130 North Atlantic Qantex 60 Plant Avenue Hauppauge, NY 11788

#### Clocks

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(516) 582-6060 (NY state)

PROCLOCK is a clock/calendar card designed specifically for Apple's new ProDOS. PROCLOCK's powerful interrupt capabilities are invaluable to programmers working with timesensitive routines and mult-tasking. It can generate interrupts at intervals of 1 millisecond, 1 second, 1 minute, 1 hour, or any combination. All interrupts are software-controlled and through an on-board PIA. Compatible with programs written for the Superclock II, Apple Clock, and Thunderclock Plus. Built-in 10-year lithium battery keeps the clock running even if your computer is left off for long periods of time. With ProDOS, cataloged disk entries are automatically date and time stamped.

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Dat-A-Clock is easy to use and fully compatible with any Apple II computer. It has the date, month and year capability, an on-board lithium battery with a 3year life span and an externally accessible EPROM. It is available in kit form for \$89.00 complete with instructions or fully assembled for \$99.00. Add \$2.00 for shipping and handling. Circle HelpCard No. 133 P&B Research Consultants, Inc. 231 East Grand Blvd. Detroit, MI 48207 (313) 259-5951

#### SOFTWARE

**Business** (General)

SuperNOVA is a power conditioner/

UPS system designed for microprocessor based on-line systems. On loss of utility power, or if the AC line voltage drops too low, a transfer switch places the load on the inverter which is powered by internal service-free batteries. On restoration of utility power or the AC line returning to proper levels, the load is automatically retransferred back to the AC line. \$645.00. For additional information contact Ken and Niovitch. Sales Marketing Manager, at (201) 661-3434. Circle HelpCard No. 137 Nova Electric Mfg. Company Nutley, New Jersey

The Art of Negotiating(R) Computer Preparation Program, for Apple II, //e, and Apple II Plus computers, includes the computer program, on-line tutorial, User's Manual, and two of Gerard Nierenberg's books, Fundamentals of Negotiating and The Art of Negotiating(R) Worktext. Gerard Nierenberg's Art of Negotiating(R) seminars have trained more than 115,000 executives in the last fifteen years. The software is useful both for negotiation preparation and for negotiation training. It also shows how to use your knowledge to develop successful strategies and negotiating gambits for your negotiation. \$495.00. For further information, call:

Gerard I. Nierenberg (212) 986-5555. Circle HelpCard No. 144

The Personal Bibliographic System, for Apple II, //e (64 Kbytes of memory, 80 character display, 2 disk drives and a printer) and Apple II+ computers, is of special interest to librarians, researchers, scholars, teachers and writers. The program formats citations for books, journal articles, maps, letters, manuscripts, reports, newspaper articles, dissertations, trade catalogs, conference proceedings, music scores, sound recordings, motion pictures, video recordings, audiovisual materials, art works, computer programs, and data files. \$250.00. A demonstration program allowing up to 10 citations is available with the user manual for \$75.00. For further information, contact Victor Rosenberg, at (313) 996-1580. Circle HelpCard No. 147 Personal Bibliographic Software, Inc.

The Gencalc Accounting Spreadsheet integrates BPI System's General Accounting and Visicorp's VisiCalc into a more powerful package. Data and financial reports from BPI System's General Ledger can be transferred to a VisiCalc spreadsheet. The user then has complete control to create reports with tables and graphs. By adding additional

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programs, the user can build a complete integrated accounting, spreadsheet, database, word processor, graphics and communications package, \$95.00. Circle HelpCard No. 149 Business Machines and Systems P.O. Box 965

Bolinas, CA 94924

Time-Trax is a time and date oriented calendar program that will remind you appointments, errands, phone messages, birthdays, holidays, bills to pay and much more. Time-trax can notify you of pending important events. With a simple keystroke you can make, review and edit entries or search for any entry from past, present or future months. For any Apple II with 48K \$99.95.

Circle HelpCard No. 150 Creative Peripherals Unlimited 1606 S. Clementine Anaheim, CA 92802 (800) 854-8021 (800) 432-7268 (CA)

Data Analysis Interactive System (DAISY) performs 5 types of regressions, residual analysis, model validation, descriptive statistics, correlations, ANOVA, crosstabulation, hypothesis tests, nonparametric tests. Features spreadsheet-style data entry. handles missing data, provides 21 math transforms, 4 time-series transforms. Includes HELP facility, sorting, ranking, creating subfiles and scatter and sequence plots or histograms (log or linear). Optional 80-column display, 48 or 64K memory capability on Apple II Plus. 64 or 128K memory capability on Apple //e, \$199.95 plus \$3.00 shipping and handling. A separate utility is available for \$99.95 to interface with Multiplan and General Manager and to download from mainframes. Circle HelpCard No. 152

Rainbow Computing Inc. 9719 Reseda Blvd Northridge, CA 91324 (213) 349-0300 (CA) (800) 423-5441

#### Educational

Reader's Digest Software has introduced a line of "learning games for the home,"software packages for Apple II, II Plus and //e computers, ranging from puzzle games to word games to games of strategy and skill.

The software for early childhood (ages

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For more information, call toll free, (800) 431-8800. In New York, Alaska and Hawaii, call (914) 241-5727. Circle HelpCard No. 158 Reader's Digest Software Reader's Digest Services Pleasantville, NY 10570

The Learning Company has introduced the following new educational software programs, running on Apple II computers, for children:

- Reader Rabbit and The Fabulous Word Factory, for children aged 5 to 7, matches pictures and words, labels boxes and loads words (over 200 three-letter words) into a word train. \$39.95.
- Word Spinner, for ages 6 to 10, builds over 500 three-letter words, and 1,000 four-letter words. Children learn to recognize word patterns and develop critical vocabulary and spelling skills. \$34.95.
- Number Stumper, for ages 6 to 10, teaches basic addition and subtraction. Using animated dice, children create and solve mathematical equations and develop abstract reasoning strategic thinking skills. \$39.95.
- Addition Magician, for ages 6 to 10, is a race-against-the-clock number strategy game that teaches the basic concepts of addition and flexible thinking about numbers. \$34.95.
- Colorasaurus, for ages 3 to 6, is a coloring book for young artists. Colorful dancing dinosaurs and an outrageous volcanic world help teach children color discrimination, matching and memory skills. \$29.95.

For further information, contact Chris Mullins, at (415) 328-5410.

Circle HelpCard No. 159 The Learning Company 545 Middlefield Road, Suite 170 Menlo Park, CA 94025

School Attendance Manager, for Apple II Plus or //e computers (with two disk drives and a printer), accommodates the attendance needs of any size school. It prints a daily absentee report, an individual absentee record for any student, state-required monthly attendance registers, homeroom lists, class rosters, letters to parents, lists of students who have been absent more than a specified number of days, and mailing labels. It also keeps track of absences, daily and cumulative tardies, half days, religious absences, withdrawals, and home instruction. The Small School version (up to 800 students) is \$240.00; the Large School version (up to 2400) is \$315.00. A demo disk is available for \$25.00. For further information, contact Leslie Nassau, at (201) 391-7555.

Circle HelpCard No. 164 K-12 Micro Media, Inc. 172 Broadway Woodcliff, NJ 07675

Trap-A-Zoid, for Apple II, II Plus and //e computers, motivates children 7 and older to recognize and draw over 20 geometric shapes. The object of the game is to trap moving creatures called Zoids by drawing geometric shapes around them. Game features multiple skill levels and high resolution graphics. \$39.95. For further information, contact Ruth Hobler, at (415) 962-9555.

Circle HelpCard No. 165 The Bohle Company 2035 Landings Drive Mountain View, CA 94043

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Vernier Software has introduced seven new physics programs for the Apple II and //e computers. They include Orbit II, Graphical Analysis II, Vector Addition II, Kinematics II, Projectiles II, Charged Particles II, and Wave Addition II. The programs assist the teacher by providing demonstrations, lab simulations, data analysis and problem solving practice for the student. Each program sells for \$24.95. (A catalog of 1984 products is available on request.) Circle HelpCard No. 166 Vernier Software 2920 S.W. 89th Street

Electronic Playground is a playful new program to develop early learning skills. This program will keep your child's attention for hours with colorful graphics, animation and cheerful sound effects. Hi-res menus require no keyboard input or parental assistance.

Movement throughout is accomplished by simply using the joystick. In Matchbox, kids will delight in the animated antics of the Matchman character while matching shapes, letters and improving counting skills. Magic Blackboard lets your child create colorful and imaginative pictures by drawing with the joystick. Natural and easy use of the full hi-res capability of the Apple. A hi-res catalog saves pictures created on the Magic Blackboard and then displays miniatures of the pictures that were stored on the disk. All of this is done without using any keyboard input. \$24.95 plus \$2.00 shipping and handling.

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#### **Financial**

Stock Folio is an integrated software package controlled entirely by menu selection. It maintains up to 248 sets of daily or weekly price and volume data for as many as 48 stocks. Stock data review features include high resolution graphic bar charts, multiple moving averages for trend spotting, relative strength versus a market index, and price trend momentum oscillators. Portfolio reports include current status, closed positions, unrealized or realized gain/loss, dividend yield, and cash account review. The program requires any Apple II computer with one disk drive, 48K memory, Applesoft, and DOS 3.3. An optional second drive and a printer are also supported. \$79.50.

Circle HelpCard No. 171 Micro Program Designs 5440 Crestline Road Wilmington, DE 19808 (302) 738-3798

Time is Money, for Apple II, II Plus and //e computers (with single disk drive), is a personal accounting system. The program will balance checkbooks, monitor budgets, calculate net worth, print checks, and track fully or partially tax deductible items. Full report generation and graphics capabilities are included. \$100.00.

Circle HelpCard No. 172 Turning Point Software, Inc. 11A Main Street Watertown MA 02172 (617) 923-4441

Dollars and Sense gives you a clear picture of your financial behavior. It can establish budgets along any lines you like, monthly or annually, fixed or variable, up to 120 accounts. It can write

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Circle HelpCard No. 176 Stockware Systems 9837 Folsom Blvd., Suite J309 Sacramento, CA 95827

Stockpak II is the stock market software for hardnosed investors. Standard & Poor's Corporation has been a major supplier of financial information for over 120 years. Their system consists of one program diskette and one (or more) database diskettes. Each month, users receive a new Database diskette. In this way, current information is available on up to 4,500 companies. Over 100 information items are available for each company in the database. Get the data you want instantly, whether it's S&P's exclusive stock ranking, earnings, dividends, sales, price history, balance sheet items, or performance ratios. In less than 30 seconds, you can match criteria of your own choosing against companies in the database to find only those that "fit." You can easily customize information items, criteria sets and report formats to suit your own preference. Demonstration kit \$10.00. Subscriptions to the database service: Composite (1,500 leading companies) \$275.00, All-NYSE \$275.00, All-ASE \$275.00, All-OTC \$520.

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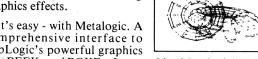
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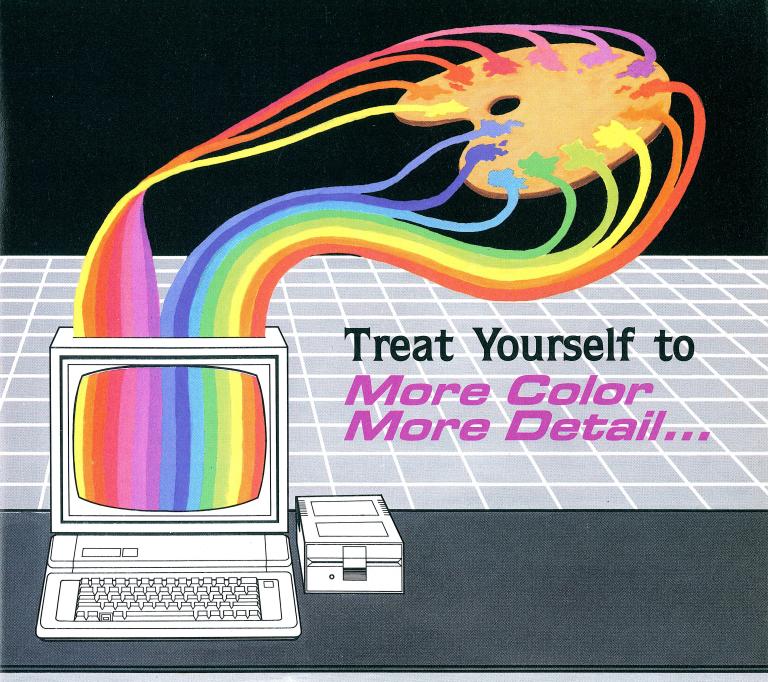
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RAM, paddles or joystick, \$44.95. Also available is Airsim-1 (24.95) and Spitfire Simulator (40.00). Circle HelpCard No. 193 Mind Systems Corp. PO Box 506 Northampton, MA 01061 (413) 586-6463

#### Graphics

Flying Colors software turns the Apple computer into a color graphics workstation. Draw interactively using the joystick or paddles. Also works with many other input devices that connect to the Apple game paddle ports. Generate automatic circles or boxes of any size with the "rubber band" algorithm. Erase or fill and use the "micro" mode for detail work or paint with the broad color brush for big splashes of color. Includes free slide projector program \$39.95.

Circle HelpCard No. 200 The Computer Colorworks 3030 Bridgeway Sausalito, CA 94965 (800) 874-1888 (415) 331-3022 (CA)

Graph-Art System I, a graphic utility program for the Apple II Plus and //e, can help users create brilliant pictures for entertainment, business display, or computer art hobbyist. It includes a 50¢ coloring program, a fast eraser, an inverse picture producer, a tracing sheet, a slide show organizer, mix graphic/text, and much more. The program is on disk, with a tutorial/ instruction booklet, and demo pictures. \$34.00.

Circle HelpCard No. 202 Apollo Software Technology P.O. Box 34057 Houston, TX 77234

B/GRAPH is a professional graphics charting and statistical analysis program. It can create bar charts, 3-D bar charts, segmented/stacked bar charts, line and area graphs, scatter/point graphs, stock market graphs, pie charts, and graphing of 1-3 factors each with up to 100 data points. Provides instant conversion between all graph types without data re-entry. Features mean, standard deviation, skewness, variance, F-test, Ttest, Chi-square, poisson-bionomial & normal distribution and much more. Includes comprehensive documentation and a complete tutorial. For any Apple II computer.

Circle HelpCard No. 205 Inhome Software, Inc. 2485 Dunwin Drive. Unit 8 Mississauga, Ontario Canada L5L 1T1 (416) 828-0775

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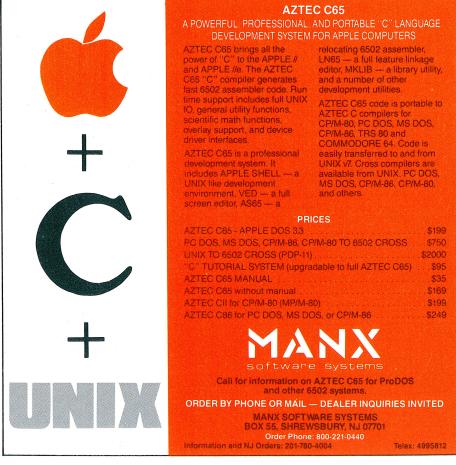
And while you're at it, consider extending your subscription right now, even if it's not due at this time. If you save us the extra trip through our files by doing this, we'll add a bonus issue to that extension.

#### Languages (Programming)

H.U.M.A.N.S., Inc. has released two programs for Apple II Pascal users. PLUS, a collection of Pascal functions and procedures, is primarily for programmers, The source code is included on the unprotected disk, for \$29.95. DOCTOR is a DOCument Text ORganizer. The program word processes text files created using the Pascal system editor. \$39.95.

Circle HelpCard No. 207 H.U.M.A.N.S., Inc. P.O. Box 352 Sterling, VA 22170

PROBE blends beginning BASIC hands-on training with self-instructional activities. Learn simple exercises like "Teaching the Computer to Count." Discover how to DEBUG. Create graphics, sounds, and animation. A Helper's Manual answers many questions. PROBE is available for four different age levels, ranging from five years to adult. Includes workbook, Helper's Manual, a wall chart of computer commands, a 22 x 16 inch keyboard wall chart, 50 sheet pad of screen grids, and a diskette. Circle HelpCard No. 210



Scott, Foresman and Company 1900 East Lake Avenue Glenview, IL 60025 (800) 323-3728 (800) 942-6251 (after tone dial 141)

The Thunder "C" Compiler is a native code compiler based on the small "C" compilers as published in Dr. Dobbs Journal. The Compiler is written in Pascal under the Apple Pascal Operating System allowing the user to write "C" language programs as stand alone programs or as subroutines to Pascal and FORTRAN programs. A great deal of the "C" language is supported under this Compiler. This does not include floating point arithmetic or structures. Introductory price is \$49.95, and includes a user's manual, the compiler and the runtime library. Apple Pascal 1.1 required for operation. Circle HelpCard No. 212 Thunder Software P.O. Box 31501 Houston, TX 77096 (713) 728-5501

#### Music

The Music Construction Set allows the user to work with an intricacy and range of sound quality. Features sophisticated "mouse" with icons using a joystick. The user can "carry" notes up to the staff, lay in rests, signatures, clefs, then point to the little piano and listen to the whole thing being played back. Options are included to vary the music's speed, sound quality, and volume, cut out whole measures then paste them in somewhere else, print the score out to a printer, etc.. The package includes twelve pieces of music. Circle HelpCard No. 213 Electronic Arts

Musicland, built around four fully integrated basic games, takes full advantage of the Apple II's colorful graphics power to bring very advanced musical tools to even young children.

2755 Campus Drive

(415) 571-7171

San Mateo, CA 94403

- Music Blocks allows composition of entire songs with a set of musical building blocks.
- Music Doodles relies on imagination. Visual and aural feedback builds musical discrimination.
- Sound Factory allows experimentation with the basics of sound; harmonics, envelopes and detuning.

The built-in Musicland help screen and special manuals insure that the games' capabilities are fully used, both for

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#### Utility Routines Library for the Apple II/IIe

There you are, sitting in front of a dead screen, wondering if your Apple has broken down or if your program has gone to sleep.

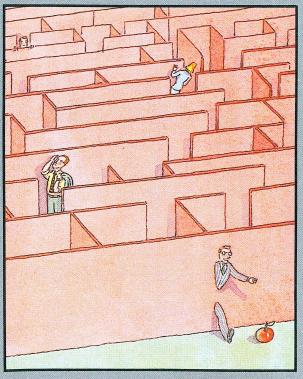
If you're running into slow executions and long and frequent pauses, AMPERSOFT will give you a lot more time to be creative. It's an entire library of Applesoft enhancements that run at machine language speeds.

If most programs take away memory, this one gives it back. AMPERSOFT is the only Applesoft enhancement package that puts DOS and itself in the upper 16K of a 64K system, giving you a new usable gain of thirty percent instead of a net memory loss.

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They let you Sort sixty times faster than Applesoft. Collect garbage two to three hundred times faster. And format reports to the screen or printer any way you want them.

If you're tired of waiting for your Apple, you don't have to wait any more. AMPERSOFT is here.



Stop Waiting for your Apple.

#### SPECIFICATIONS:

SPEED ADVANTAGES:

300x faster. Garbage collection — Sorting — 60x faster. Disk array Sort/Recall -- 16x faster.

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30% more user program memory. Matrix arithmetic

Selective array clear. Full PRINT USING formatting for numbers and

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Compatible with GALE, PLE, FID, MUFFIN, COPYA

and all DOS Toolkit programs. Allows concurrent residence of Applesoft and Integer BASIC with 32K RAM card, extra 16K card, or ROM card in another slot

AUTHOR:

Cornelis Bongers

SYSTEM REQUIREMENTS:

At least 64K, Applesoft, DOS 3.3 and one Disk Drive. Operates with all Applesoft-Compatible computers including the Apple IIe and the Franklin ACE. Apple II. Plus requires RAM card — 16K or larger.

\$49.95 postpaid

ORDERING INFORMATION:

If your Apple dealer doesn't have AMPERSOFT you may order directly by mail or phone. (Mass. residents please add 5% sales tax.) We also accept VISA and MasterCard.

#### MicroSPARC Inc.

10 Lewis Street, Lincoln, MA 01773 (617) 259-9710

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#### IAC Presents:



This is the first in an ongoing series of theme packaged public domain software programs. The Educational 3Pak™ contains three disks offering programs to help teach Apple Soft Language and Machine Language with a series of Math Tools.

The 3Pak™ programs are written for Apple II computers in DOS 3.3 and are ready to run—just boot. And the Educational 3Pak™ is priced at only \$24.95.

To order by mail send check or money order to: International Apple Core, 908 George Street, Santa Clara, CA 95050. Payment written to International Apple Core must accompany order and must be in U.S. funds are drawn on U.S. bank. (California residents add 6.5% Sales Tax.)

To order by phone call: (408) 727-7652, VISA or Mastercard accepted. Please have your card number ready.

Dealer inquires are welcome.

Apple Soft Tutor Apple Tutorial Menu Strt Help Pt. 1 Pt. 2 Qref

Machine Language Utilities Hello

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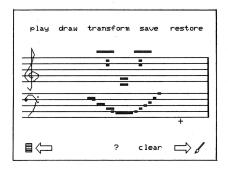
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home enjoyment and classroom learn-The main instruction/student manual is complemented by a teacher's manual and Musicland activity cards.

Musicland requires a 64K Apple II computer system with one disk drive plus synthesizers (the Mountain Computer MusicSystem) which plug into the Apple. Musicland is \$150.00, and synthesizers are available for under \$400.00. For further information, contact Ellen V.B. Lapham, at (415) 966-1273.

Circle HelpCard No. 214 Syntauri Corporation 4962 El Camino Real, Suite 112 Los Altos, CA 94022



#### Personal

THE WORD processor, version 2.0, contains the complete text of the King James Version Bible with programs for accessing, analyzing, displaying, cross referencing and printing the Bible text. Version 2.0 allows the user to add his own comments to printed output, cross reference indexes in Bible sequence or in a user controlled sequence, and a variety of other features. \$249.95. Updates from version 1.0 are \$49.95. Circle HelpCard No. 218 Bible Research Systems 9415 Burnet Road Suite 208 Austin, TX 78781 (512) 835-7981

**Relax**, a hardware/software system for Apple II, II Plus, and //e computers, is a stress reduction system. Using the sensor equipped headband, measurements of EMG pulses are sent to the computer, and are portrayed graphically on the monitor (readings can be also sent to a printer). A control unit allows selection of the sampling rate. An audio tape provides guided deep relaxation exercises. A workbook provides complete documentation and aids in the creation of a personal stress profile and helps evaluating progress over time. Circle HelpCard No. 219

Synapse 5221 Central Avenue Richmond, CA 94804 (415) 527-7751

Calmpute 1(tm) is a package combining a GSR(Galvanic Skin Resistance) monitor with software for the Apple II computer. In addition to monitoring stress, the program can help teach stress control. A number of stimulating biofeedback games are included. Selectable feedback options include baseline sensitivity, range, display method, integration times, multiple displays, tone feedback, threshold, and auto erase.

Circle HelpCard No. 220 Thought Technology, Ltd. 2180 Belgrave Avenue Montreal, P.Q., Canada H4A 2L8 (514) 489-8251

#### Utilities

UltraPlan, a spreadsheet program for the Apple II and //e computers, automatically takes advantage of a wide range of memory cards up to 512K, as well as the Videx display cards. The program has a structure similar to VisiCalc and includes individual column widths and a variety of security commands. UltraTerm, Videx's latest display peripheral, displays models on up to 128 columns by 32 lines. Circle HelpCard No. 221

Videx 1105 NE Circle Blvd. Corvallis, OR 97330 (503) 758-0521

Microfile is an Apple II Plus and //e based filing and retrieval program that lets the user create catalogs of publications, records, etc., then tell the computer the categories when searching for a particular file. The program searches alphabetically, too. Categories are described using keywords, and retrieval of data is through the very detailed keyword system. Circle HelpCard No. 224 Heyden & Son, Inc. 247 South 41st Street Philadelphia, PA 19104 (215) 382-6673

Applesoft Line Editor Global (GALE) is a word processor for writing Applesoft programs. Automatically insert or delete changes in program lines or change a character or word wherever it appears (you don't have to type the rest of the line after a change so you spend significantly less time typing). GALE eliminates dozens of keystroking operations while it lets you instantly renumber your program lines. or take two programs and merge them

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Circle HelpCard No. 230 MicroSPARC, Inc. 10 Lewis Street Lincoln, MA 01733 (617) 259-9710

#### Word Processing

Simply Perfect, an integrated program combining Letter Perfect, Spell Perfect and Data Perfect, runs on the Apple //e computer (with extended 80 column card). The program, which loads from a single diskette, uses common commands throughout. \$189.95.

Circle HelpCard No. 234 LJK, Inc. 7652 Big Bend Blvd. St. Louis, MO 63119 (314) 952-1855

MegaSpell, a spelling checker for the MegaWriter word processing program, comes complete with a 40,000 word dictionary. The user can add another 10,000 words. The program displays misspelled words in context and checks corrections against its dictionary. There are only five commands, yet the program can correct multiple occurrences of a misspelled word with a single keystroke. \$59.95. (An enhanced version of MegaWriter takes advantage of the updated features of the Apple //e computer. \$99.95.)

Circle HelpCard No. 235 Megahaus Corporation 5703 Oberlin Drive San Diego, CA 92121 (619) 450-1230

Power Text, a word processing system for professionals, prints the most complex documents, from business letters to dramatic scripts to legal documents packed with footnotes, precisely consistent with the formats you define. You need never worry about printed styles as you write. Power Text can automatically indent and assign numbers to your paragraphs (Roman or Arabic numbering, or alphanumerics, as you direct). There's a full complement of editing features, including "nested" editing, equivalent to split-screen editing. You get built-in form letter capability, versatile columnar capabilities, user-definable function keys and more. For any Apple II computer, \$299.00, or Apple II and Apple /// with Pascal, for \$199.00.

Circle HelpCard No. 238 Beaman Porter, Inc. Pleasant Ridge Road Harrison, NY 10528 (914) 967-3504

The Fancy Font system provides highresolution, proportionally spaced, letter quality printing on your Epson MX, FX or Gemini 10 and 15 printers. Type styles include Roman, Bold, Italic, Script, Old English, and more. You can even create your own characters or logos, up to 1 inch by 1 inch. A database of over 1500 characters (including math symbols) is included in the package as are over 30 font sets. It includes the full Hershey character database, and characters can be scaled to any size. Use your favorite editor or word processing package to create a file to be printed. Include as few or as many formatting directives as you desire, then use Fancy Font to print your file. Requires CP/M. System diskette \$180.00, Demo diskette \$10.00.

Circle HelpCard No. 239 SoftCraft 8726 S. Sepulveda Suite 1641 Los Angeles, CA 90045

#### MISCELLANEOUS

The Midnight Turtle, a Logo Information Exchange, has gone on-line with electronic mail, chatting, up-and downloading of Logo software, and five bulletin boards. The system is in operation twelve hours a day, 7:00 PM to 7:00 AM CST. The access number is (214) 783-7548.

Circle HelpCard No. 266 Young People's Logo Association P.O. Box 855067 Richardson, TX 75085

Insurance coverage for your personal computer (and all peripheral equipment) is available on an "all risk" replacement cost basis. In addition, there is automatic coverage of up to \$1,000 for data stored that is lost or destroyed due to a covered loss. The cost is \$5 for every \$1,000 of coverage. For further information, contact a local Sentry agent, or call Kyle Alexander, at (715) 346-6617.

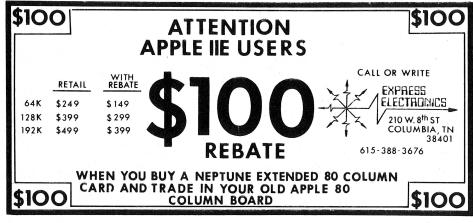
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